



BookNus IBA Math Matrix

IBA Past-Paper Mathematics

অদম্য স্বপ্নবাজদের স্মার্ট সঙ্গী

PrepNus Academic Team

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Number System

বিষয়	পৃষ্ঠা
Classification of Numbers: Integers, Primes, Co-primes, Even/Odd properties, and the Number Line	৬
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Classification of Numbers: Integers, Primes, Co-primes, Even/Odd properties, and the Number Line

Classification of Numbers: Integers, Primes, Co-primes, Even/Odd properties, and the Number Line — IBA past-paper practice, ordered easiest → toughest.





Practice — Classification of Numbers: Integers, Primes, Co-primes, Even/Odd properties, and the Number Line

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. If $\frac{1}{x} + \frac{1}{y} = 7$ and $\frac{1}{x^2} - \frac{1}{y^2} = 21$, what is the value of x ? (IBA MBA '00)

- ক $\frac{1}{2}$ খ $\frac{1}{3}$
 গ $\frac{1}{5}$ ঘ $\frac{1}{7}$
 ঙ None of these

২. If x is a positive even integer and y is a positive odd integer, which of the following will be even? (IBA BBA '14)

- ক $x^3 + y^2$ খ $3x + y + y^2$
 গ $(x - y)(x + y)$ ঘ $xy + y^2$
 ঙ None of these

৩. If m is an even integer and n is an odd integer and both are positive numbers, which of the following must be even? (IBA MBA '02)

- ক $m^2 + n^2$ খ $mn + n^2$
 গ $m^3 + n^2$ ঘ $mn + m^2$
 ঙ None of these

৪. If the 1st number in a series of consecutive odd numbers is 8 less than the last number in the series, how many numbers are there in the series? (IBA BBA '04)

- ক 4 খ 5
 গ 7 ঘ 8
 ঙ None of these

৫. The sum of six consecutive odd number exceeds twice the largest by 38. Find the sum of the six numbers. (IBA BBA '00)

- ক 43 খ 50
 গ 64 ঘ 72
 ঙ None of these

৬. A cashier reversed the digits of one customer's correct amount of change and thus gave the customer an incorrect amount of change. If the cash register contained Taka 45 more than it should have as a result of this error, which of the following could have been the correct amount of change in Taka? (IBA BBA '05)

- ক 83 খ 45
 গ 54 ঘ 65
 ঙ None of these

৭. If x is a positive integer, which of the following must be odd? (IBA MBA '24)

- ক $x + 1$ খ $x^4 - x^2$
 গ $x^3 - x + 1$ ঘ $x^3 + 2x - 1$
 ঙ none of these

৮. If $(2x^2 + 3x + y)$ is an even integer, which of the following must be true? (IBA BBA '16)

- ক x is even খ y is odd
 গ $(x+y)$ is even ঘ $(x+y)$ is odd
 ঙ none of these

৯. A set consists of x consecutive integers, including 2. The sum of the integers in the set is -11 . What is (are) the possible value(s) of x ? (IBA MBA '25)

- ক 10 খ 11
 গ 22 ঘ A & C
 ঙ B & C

১০. If x is even integer and $\frac{x}{12}$ is an odd integer, which of the following is NOT an even integer? (IBA MBA '15 (1))

- ক $\frac{x^2}{9}$ খ $\frac{x^2}{12}$
 গ $(x^2)24$ ঘ $\frac{x^2}{36}$
 ঙ None of these

উত্তরমালা

১. গ	২. খ	৩. ঘ	৪. খ	৫. ঘ	৬. ক	৭. গ	৮. গ
৯. ঙ	১০. ঙ						

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এই অধ্যায় অ্যাপে

সমাধান, ব্যাখ্যা ও অতিরিক্ত প্রশ্ন অ্যাপে - Solutions, explanations & extra questions — in the app



Factors, Multiples & H.C.F/ L.C.M.: Prime Factorization, counting factors, and H.C.F./L.C.M. applications

Factors, Multiples & H.C.F/L.C.M.: Prime Factorization, counting factors, and H.C.F./L.C.M. applications — IBA past-paper practice, ordered easiest → toughest.

Practice — Factors, Multiples & H.C.F/L.C.M.: Prime Factorization, counting factors, and H.C.F./L.C.M. applications

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. How many positive integers are both multiples of 4 and divisors of 64? (IBA BBA '05)

- | | |
|-----------------|---------|
| ক Two | খ Three |
| গ Four | ঘ Five |
| ঙ None of these | |

২. The integers between 1 and 100, inclusive, are put in list A if they are divisible by 2 and in list B if they are divisible by 3. How many integers in list A are not in list B? (IBA BBA '13)

- | | |
|------|------|
| ক 11 | খ 16 |
| গ 25 | ঘ 33 |
| ঙ 34 | |

৩. Ajit, Bilash and Chinu start at the same time in the same direction to run around a circular stadium. Ajit completes a round in 252 seconds, Bilash in 308 seconds and Chinu in 198 seconds, all starting at the same point. After what time will they all be again at the starting point? (IBA BBA '13)

- | |
|-----------------------------|
| ক 26 minutes and 18 seconds |
| খ 42 minutes and 36 seconds |
| গ 45 minutes and 38 seconds |
| ঘ 46 minutes and 12 seconds |
| ঙ none of these |

৪. A certain integer n is a multiple of both 5 and 9. Which of the following must be true?

- | | |
|--|------------------|
| I. n is an odd integer | খ III only |
| II. n is equal to 45 | ঘ I and III only |
| III. n is a multiple of 15 (IBA BBA '13) | |
| ক II only | |
| গ I and II only | |
| ঙ II and III only | |

৫. If $z = 14 \times 15 \times 24$, Which of the following is not an integer? (IBA MBA '11 (2))

- | | |
|------------------|------------------|
| ক $\frac{z}{10}$ | খ $\frac{z}{12}$ |
| গ $\frac{z}{28}$ | ঘ $\frac{z}{32}$ |
| ঙ None of these | |

৬. If $(125)^{14} \times (48)^8$ were expressed as an integer, how many consecutive zeros would that integer have immediately to the left of its decimal point? [If $(125)^{14} \times (48)^8 = x$, then how many trailing zeros does x have?] (IBA MBA '20)

- | | |
|-------|------|
| ক 22 | খ 32 |
| গ 42 | ঘ 50 |
| ঙ 112 | |

৭. If x , y and z are positive integers and $3x = 4y = 7z$, then the least possible value of $x + y + z$ is: (IBA MBA '16 (1))

- | | |
|-----------------|------|
| ক 33 | খ 40 |
| গ 49 | ঘ 61 |
| ঙ None of these | |



- I. $\frac{y+z}{x}$
- II. $\frac{xy}{z}$
- III. $\frac{yz}{x}$ (IBA MBA '14)

- (क) I (ख) II
 (ग) III (घ) I and II
 (ङ) II and III

☐ क 25
 ☐ ख 27
☐ ग 45
 ☐ घ 75
☐ ङ None of these

(क) 40 (ख) 60
 (ग) 80 (घ) 100
 (ङ) none of these

১. ঘ	২. ঙ	৩. ঘ	৪. খ	৫. ঘ	৬. খ	৭. ঘ	৮. ক
৯. ক	১০. গ						



সমাধান, ব্যাখ্যা ও অতিরিক্ত প্রশ্ন আপোনা Solution, explanations & extra questions — in the app

Divisibility & Remainders: Divisibility rules, remainder theorems, and edge cases

Divisibility & Remainders: Divisibility rules, remainder theorems, and edge cases — IBA past-paper practice, ordered easiest → toughest.



**Practice — Divisibility & Remainders: Divisibility rules, remainder theorems, and edge cases**

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. When three numbers are divided by 5, the remainders are 0, 3 and 4 respectively. Which of the following could be the sum of the three numbers? (IBA MBA '11 (2))

- ক 52 খ 63
 গ 74 ঘ 86
 ঙ None of these

২. What is the total number of integers between 100 and 200 that are divisible by 3? (IBA MBA '05)

- ক 33 খ 32
 গ 31 ঘ 30
 ঙ None of these

৩. If n is an integer divisible by 6 but not by 4, then which of the following CANNOT be an integer? (IBA BBA '15)

- ক $n/2$ খ $n/3$
 গ $n/12$ ঘ $n/10$
 ঙ none of these

৪. A certain integer n when divided by 5 yields a remainder of 4. Which of these cannot be an integer? (IBA BBA '12)

- ক $n/9$ খ $n/10$
 গ $n/14$ ঘ $n/19$
 ঙ none of these

৫. $(4^{41} + 4^{42} + 4^{43})$ is divisible by - (IBA BBA '09)

- ক 7 খ 13
 গ 15 ঘ 17
 ঙ none of these

৬. When 10 is divided by a positive integer n , the remainder is $n - 4$, which of the following could be the value of n ? (IBA BBA '05)

- ক 3 খ 4
 গ 7 ঘ 8
 ঙ None of these

৭. Integer x when divided by y , quotient is 11 and remainder is 4, and x is divided by 16 quotient is 4 and remainder is y , find the value of X (IBA MBA '19)

- ক 60 খ 70
 গ 80 ঘ 90
 ঙ none of these

৮. When x is divided by 10, the quotient is y with a remainder of 4. If x and y both are positive integers, what is the remainder when x is divided by 5? (IBA BBA '17)

- ক 1 খ 2
 গ 3 ঘ 4
 ঙ none of these

৯. $(x^2 + 3)$ when divided by 32 and remainder is 7 and if x is a positive integer then which of the following must also be an integer

- i. $\frac{x}{2}$
 ii. $\frac{x}{4}$
 iii. $\frac{x}{6}$ (IBA MBA '19)

- ক i খ ii
 গ i & iii ঘ iii
 ঙ none of these

১০. When x is divided by 13 the answer is y with a remainder of 3. When x is divided by 7 the answer is z with a remainder of 3. If x , y and z are all positive integers, what is the remainder of $\frac{yz}{13}$? (IBA MBA '14)

- ক 0 খ 3
 গ 4 ঘ 7
 ঙ None of these

উত্তরমালা

১. ক	২. ক	৩. গ	৪. খ	৫. ক	৬. গ	৭. খ	৮. ঘ
৯. ক	১০. ক						

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Unit Digits & Cyclicity

Unit Digits & Cyclicity — IBA past-paper practice, ordered easiest → toughest.

Practice — Unit Digits & Cyclicity

প্রশ্ন ১-৭: Read each problem carefully. Pick the option that solves the equation.

১. What percentage of numbers from 11 to 90 has 0 or 5 in the unit's digit? (IBA BBA '15)

- ক 10% খ 15%
গ 20% ঘ 21%
ঙ none of these

২. What is the last digit of 4^{218} ? (IBA BBA '04)

- ক 2 খ 4
গ 6 ঘ 8
ঙ none of these

৩. The quantity $2^6 \cdot 5^7 \cdot 3^7$ will end in how many zeroes? (IBA BBA '14)

- ক 4 খ 5
গ 6 ঘ 7
ঙ none of these

৪. A two-digit number has 3 in its unit digit. The Sum of its digits is one seventh of the number itself. What is the number? (IBA MBA '05)

- ক 73 খ 63
গ 53 ঘ 50
ঙ None of these

৫. What is the units digit of the sum $3^{44} + 5^{43} + 2^{12}$? (IBA BBA '17)

- ক 2 খ 4
গ 8 ঘ 9
ঙ none of these

৬. What is the remainder when 457×11569 is divided by 5? (IBA BBA '22)

- ক 3
খ 2
গ 1
ঘ 0
ঙ None of these

৭. If x is a positive integer, what is the units digit of $(24)^{5+2x} \times (36)^6 \times (17)^3$? (IBA BBA '15)

- ক 2 খ 3
গ 4 ঘ 6
ঙ none of these

উত্তরমালা

১. গ

২. গ

৩. গ

৪. খ

৫. ক

৬. ক

৭. ক



এই অধ্যায় অ্যাপে

সমাধান, ব্যাখ্যা ও অতিরিক্ত প্রশ্ন অ্যাপে - Solutions, explanations & extra questions — in the app



Algebra

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Linear Equations

Linear Equations — IBA past-paper practice, ordered easiest → toughest.

Practice — Linear Equations

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. Tasty Cookies sells two kinds of cakes: Lemon for Tk. 40 and Lazeez for Tk. 25. On a certain day, the shop sold 100 cakes and got Tk. 2980 in revenue from the sales. How many Lemon cakes did they sell? (IBA MBA '15 (1))

- ☐ ক 30 ☐ খ 32
☐ গ 40 ☐ ঘ 48
☐ ঙ None of these

২. The total weight of 2 dozen gold bars and 3 dozen silver bars is 960 gms. If the weight of silver bar is 10 gms, what is the weight of a gold bar? (IBA MBA '13)

- ☐ ক 20 ☐ খ 22
☐ গ 24 ☐ ঘ 25
☐ ঙ None of these

৩. If $\frac{2x+4y+6z}{6} = \frac{x+2y}{2}$, then $z = ?$ (IBA MBA '13)

- ☐ ক $\frac{x+2y}{6}$ ☐ খ $\frac{x+2y}{3}$
☐ গ $\frac{2x+y}{6}$ ☐ ঘ $\frac{2x+y}{3}$
☐ ঙ None of these

৪. Half the difference between two numbers is 2. The sum of the greater number and twice the smaller number is 13. Find the smaller number. (IBA MBA '07)

- ☐ ক 2 ☐ খ 3
☐ গ 5 ☐ ঘ 7
☐ ঙ None of these

৫. If $y = 8x + 12$ and $x = z + 2$, what is y in terms of z ? (IBA BBA '03)

- ☐ ক $z + 14$ ☐ খ $8z - 4$
☐ গ $8z + 10$ ☐ ঘ $8z + 16$
☐ ঙ none of these

৬. If $y/x = 1/5$ and $2x+y = 33$, then what is the value of x ? (IBA BBA '03)

- ☐ ক $33/5$ ☐ খ 13
☐ গ 15 ☐ ঘ 17.5
☐ ঙ none of these

৭. If $a = 1$ and $(a-b)/c = 1$, which of the following is NOT a possible value of b ? (IBA BBA '05)

- ☐ ক -2 ☐ খ -1
☐ গ 0 ☐ ঘ 1
☐ ঙ None of these

৮. Practice Perfect tuition center provides 45-minute classes at Tk 12 per class. If the number of minutes Durlov spent in tuition this month was 132 greater than the number of taka spent, how many classes did he attend? (IBA MBA '24)

- ☐ ক 4 ☐ খ 5
☐ গ 8 ☐ ঘ 7
☐ ঙ none of these

৯. 80 apples were stored in two baskets in such a way that 6 times the content of the larger basket is 16 more than 10 times the content of the smaller basket. How many apples were stored in the smaller basket? (IBA BBA '99)

- ☐ ক 20 ☐ খ 23
☐ গ 24 ☐ ঘ 25
☐ ঙ 29

১০. Arif bought 17 pens of three colors - black, green, and red which cost Tk 5, Tk 10, and Tk 25 each. The total amount that Arif paid was Tk 205. If Arif bought twice as many green pens as red pens, how many black pens did he buy? (IBA BBA '16)

- ☐ ক 4 ☐ খ 5
☐ গ 7 ☐ ঘ 8
☐ ঙ none of these



উত্তরমালা

১. খ	২. ঘ	৩. ক	৪. খ	৫. ঙ	৬. গ	৭. ঘ	৮. ক
৯. ঙ	১০. খ						

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প্রেপনাস

অদম্য স্বপ্নবাজদের স্মার্ট সঙ্গী

Quadratic Equations & Polynomials

Quadratic Equations & Polynomials — IBA past-paper practice, ordered easiest → toughest.

Practice — Quadratic Equations & Polynomials

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. 5 times of a number is equal 2 times of cube of the number less than 6. What is the square of the number? (IBA MBA '19)

- ক. $\frac{1}{4}$ খ. 2
গ. $\frac{9}{4}$ ঘ. 4
ঙ. None

২. If $(x^2 - 7x + 18) = 6$, which of the following must be false? (IBA MBA '10)

- ক. $x = 4$ খ. $x = -4$
গ. $x \geq 3$ ঘ. $x > 0$
ঙ. None of these

৩. If $\frac{x}{4} - \frac{8}{x} = 1$, $x = ?$ (IBA BBA '99)

- ক. -2 খ. -4
গ. 8 ঘ. both a & b
ঙ. both b & c

৪. Find the value of K if $(x+1)$ is a factor of $x^3 + Kx + 3x^2 - 2$ (IBA BBA '97)

- ক. 6 খ. 5
গ. 4.5 ঘ. 4
ঙ. none of these

৫. The sum of all solutions for x in the equation $x^2 - 8x + 21 = |x - 4| + 5$ is equal to: (IBA BBA '15)

- ক. -7 খ. 7
গ. 10 ঘ. 12
ঙ. none of these

৬. If $(x + 4)^2 = 9$ and $(y + 3)^2 = 25$, then the minimum value of $\frac{y}{x}$ is: (IBA MBA '14)

- ক. -1 খ. -2
গ. -8 ঘ. $-\frac{2}{7}$
ঙ. None of these

৭. If $(x + y)^2 = 9$ and $(y + 3)^2 = 25$, then the maximum value of $\frac{x}{y}$ is: (IBA MBA '12 (1))

- ক. $\frac{1}{2}$ খ. $\frac{5}{2}$
গ. $\frac{5}{8}$ ঘ. $\frac{1}{8}$
ঙ. None of these

৮. If $(x + 4)^2 = 9$ and $(y + 3)^2 = 25$, then the minimum value of $\frac{y}{x}$ is: (IBA MBA '08)

- ক. -1 খ. -2
গ. -8 ঘ. -7
ঙ. None of these

৯. If $10 > x > 9$ and $x^2 = (10 - y)(10 + y)$, which of the followings is a possible value of y? (IBA BBA '04)

- ক. -7 খ. -6
গ. 3 ঘ. 4
ঙ. none of these

১০. If $\frac{a}{x} + \frac{x}{a} = \frac{x}{b} + \frac{b}{x}$, then $x = ?$ (IBA BBA '01)

- ক. $\pm\sqrt{ab}$
খ. $\pm\sqrt{\frac{a}{b}}$
গ. $\pm\sqrt{\frac{ab}{2}}$
ঘ. $\pm\sqrt{\frac{b}{a}}$
ঙ. none of these

উত্তরমালা

১. ঘ	২. খ	৩. ঙ	৪. ঙ	৫. ঘ	৬. খ	৭. ক	৮. খ
৯. গ	১০. ক						

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Inequalities & Modulus

Inequalities & Modulus — IBA past-paper practice, ordered easiest → toughest.

Practice — Inequalities & Modulus

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. If $3x - 2 \geq 1$, what is the least possible value of $3x + 2$? (IBA MBA '19)

- ☐ ক 5 ☐ খ 3
☐ গ 2 ☐ ঘ 1
☐ ঙ none of these

২. Which of the following inequalities is equivalent to $10 - 2x > 18$? (IBA MBA '05)

- ☐ ক $x > -14$
☐ খ $x > -4$
☐ গ $x > 4$
☐ ঘ $x < 4$
☐ ঙ None of these

৩. If $-1 < x < 0$, which of the following expressions has the greatest value? (IBA BBA '19)

- ☐ ক $1 - x$ ☐ খ $1 + x$
☐ গ $1 + x^2$ ☐ ঘ $1 - \frac{1}{x}$
☐ ঙ $1 + \frac{1}{x}$

৪. If $a < b$ and $c < d$, then (IBA BBA '05)

- ☐ ক $-c - a > -d - b$ ☐ খ $c + a > d + b$
☐ গ $c = d$ ☐ ঘ $a = b$
☐ ঙ None of these

৫. If x and y are both integers, $x > y$ and $-5x > 26$, then what would be the largest value of y ? (IBA MBA '16 (2))

- ☐ ক -5 ☐ খ -6
☐ গ -7 ☐ ঘ -8
☐ ঙ None of these

৬. If $x > 1$ which of the following decreases as x decreases?

- (i) $x + x^2$
 (ii) $2x - x$
 (iii) $\frac{1}{x-1}$ (IBA BBA '00)

- ☐ ক only (i) ☐ খ both (i) and (ii)
☐ গ only (ii) ☐ ঘ only (iii)
☐ ঙ none of these

৭. If $a < b$, which of the following must be positive? (IBA BBA '11)

- ☐ ক $a^2 - b^2$ ☐ খ $b^2 - a^2$
☐ গ $a^3 - b^2$ ☐ ঘ $b^2 - ab$
☐ ঙ None of these

৮. If $a < 0$ and $b > 0$, then which of the following is true?

- I. $ab - (a+b) > 0$
 II. $ab - (a+b) < 0$
 III. $ab - (a+b) = 0$ (IBA BBA '07)

- ☐ ক only I ☐ খ only II
☐ গ both I & II ☐ ঘ both I & III
☐ ঙ all of them

৯. If x is a number such that $-2 \leq x \leq 2$, which of the following has the largest possible absolute value? (IBA MBA '07)

- ☐ ক $3x - 1$ ☐ খ $x^2 + 1$
☐ গ $3 - x$ ☐ ঘ $x - 3$
☐ ঙ $x^2 - x$

১০. Given that $\$0 < x < \1 , which of the following inequalities must be valid?

- I. $x^3 > x^5$
 II. $x^4 + x^5 < x^3 + x^2$
 III. $x^2 - x^3 > x^4 - x^5$ (IBA MBA '12 (2))

- ☐ ক I only ☐ খ II only
☐ গ I & II only ☐ ঘ I, II & III
☐ ঙ None of these



উত্তরমালা

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Sequences

Sequences — IBA past-paper practice, ordered easiest → toughest.

Practice — Sequences

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. In the sequence $a_1, a_2, a_3, \dots$, the n -th term is defined as $a_n = (a_{n-1} - 1)^2$. If $a_1 = 64$, then what is the value of a_3 ? (IBA BBA '15)

- ক ১ খ ৩
গ ৪ ঘ ৯
ঙ none of these

২. Which of the following describes the relationship between A and B as shown in the pairs of numbers (A,B) = {(2,5), (3,10), (4,17), (5,26)}? (IBA BBA '12)

- ক $B=A+3$ খ $B=2A+4$
গ $B=3A-1$ ঘ $B=A^2+1$
ঙ none of these

৩. In a list of numbers, each number after the first is exactly one-third the number immediately preceding it. If the seventh number in the list is 2, what is the fourth number in the list? (IBA MBA '02)

- ক 54 খ 63
গ 27 ঘ 36
ঙ None of these

৪. The sequence $a_1, a_2, a_3, \dots, a_n$ is defined by $a_n = 9 + a_{n-1}$ for each integer $n \geq 2$. If $a_1 = 11$, what is the value of a_{34} ? (IBA BBA '17)

- ক 308 খ 327
গ 458 ঘ 469
ঙ None of these

৫. A hospital treats 4 patients in the first hour, 8 patients in the second hour, 12 patients in the third hour and so on. [patients treated at n th hour is 4 more than the patients treated in $(n-1)$ th hour]. How many hours will it require to treat a total of 84 patients? (IBA BBA '12)

- ক 6 খ 7
গ 8 ঘ 9
ঙ none of these

৬. A man sells seven different-sized balls. Each ball costs n taka more than the next one below it in size, and the price of the biggest ball is taka 46. If the sum of the prices of the seven different balls is taka 196, what is the value of n ? (IBA MBA '16 (1))

- ক 6 খ 7
গ 8 ঘ 9
ঙ None of these

৭. What is the value of z in the sequence of 2, 5, 10, 17, 28, z ? (IBA MBA '15 (1))

- ক 15 খ 26
গ 37 ঘ 41
ঙ None of these

৮. In the sequence 1, 2, 4, 8, 16, 32, each term after the first is twice the previous term. What is the sum of the 10, 11- and 12- terms in the sequence? (IBA MBA '11 (1))

- ক 2^9 খ $3(2^8)$
গ $7(2^6)$ ঘ $3(2^6)$
ঙ $7(2^9)$

৯. Let $\{a_n\}$ and $\{b_m\}$ be two arithmetic progressions of 100 terms each, such that the first series is given by 5, 8, 11, ... and the second series is given by 3, 7, 11, How many terms are common to both series? (IBA MBA '22)

- ক 20 খ 24
গ 25 ঘ 33
ঙ 50

১০. A person is standing 20 m away from a wall. When he walks towards the wall, he covers half the remaining distance in every 3 seconds. How long will it take him to reach the wall? (IBA MBA '18)

- ক 15 sec খ 6 sec
গ 6.67 sec ঘ 12 sec
ঙ None of these

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Exponents and Roots

Exponents and Roots — IBA past-paper practice, ordered easiest → toughest.

Practice — Exponents and Roots

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. If $33^2 - 17^2 = 25x$, what is the value of x ? (IBA MBA '14)

- ক $\frac{14^2}{25}$ খ 20
গ $\frac{16^2}{25}$ ঘ 32
ঙ None of these

২. If $3^x = y$, then what is 3^{4-x} ? (IBA MBA '08)

- ক $\frac{64}{y}$ খ $\frac{27}{y}$
গ $9y$ ঘ $\frac{81}{y}$
ঙ None of these

৩. If n is a positive integer and $k+2 = 3^M$, which of the following cannot be a value of k ? (IBA BBA '08)

- ক 1 খ 4
গ 7 ঘ 25
ঙ 79

৪. If x and y are positive integers and $x^4 y^5 = 512$ which of the following is the value of xy ? (IBA MBA '15 (2))

- ক 2 খ 4
গ 8 ঘ 10
ঙ none of these

৫. If $((8)^x(9)^{2y}) = 81(2^{12y})$, what is the value of x ? (IBA MBA '12 (2))

- ক 2 খ 4
গ 8 ঘ 12
ঙ 16

৬. Which of the following is equal to $\frac{3^{10}-3^4}{3^5-3^2}$? (IBA MBA '11 (1))

- ক 3^3 খ 3^2
গ $3^5 + 3^2$ ঘ $3^5 - 3^2$
ঙ None of these

৭. If $8 < \sqrt{(n+6)(n+1)} < 9$, then n would be equal to (IBA BBA '04)

- ক 5 খ 6
গ 7 ঘ 8
ঙ 9

৮. What is the value of $\sqrt{\frac{3}{2}} - \sqrt{\frac{2}{3}}$? (IBA BBA '17)

- ক $\frac{\sqrt{3}-\sqrt{2}}{\sqrt{6}}$
খ $\frac{1}{\sqrt{6}}$
গ $\frac{\sqrt{3}}{3}$
ঘ $\frac{\sqrt{3}}{2}$
ঙ None of these

৯. The expression $\sqrt{2 + \sqrt{2 + \sqrt{2 + \sqrt{2 + \dots}}}}$ extends to an infinite number of roots. Which of the following choices most closely approximates the value of this expression? (IBA BBA '15)

- ক $\sqrt{2}$ খ 2
গ $1 + \sqrt{2}$ ঘ $1 + \sqrt{3}$
ঙ none of these

১০. If $(ax)^{16}(by)^{12}(cxy)^{17}(dxy)^{11} > 0$, and all the variables are non-zero numbers, which of the following must be true? (IBA BBA '16)

- ক $ab > 0$
খ $ab < 0$
গ $cd > 0$
ঘ $cd < 0$
ঙ none of these

উত্তরমালা

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Functions and Custom Characters

Functions and Custom Characters — IBA past-paper practice, ordered easiest → toughest.

Practice — Functions and Custom Characters

প্রশ্ন ১-৮: Read each problem carefully. Pick the option that solves the equation.

১. Given that x and y are real numbers, let $f(x, y) = x + 2y$ and let $g(x) = x^3 + 3$. Then $f(5, g(2)) = ?$ (IBA MBA '00)

- ক $3x^3 + 2$ খ 11
 গ 27 ঘ 29
 ঙ None

২. If $f(-0.5) = 0$, which of the following could be $f(x)$? (IBA MBA '20)

- ক $2x + 2$ খ $4x - 2$
 গ $4x^2 - 1$ ঘ $x^2 - 1$
 ঙ $(-x)^2 - 2.5$

৩. The three solutions of the equation $f(x) = 0$ are -2 , 0 , and 3 . Therefore, the three solutions of another equation $f(x - 2) = 0$ are: (IBA BBA '19)

- ক -4 , -2 , and 1 খ -2 , 0 and 3
 গ 4 , 2 , and 5 ঘ 0 , 2 and 5
 ঙ None of these

৪. If $\#$ is an operator such that $(4\#2 = 14)$ and $(2\#3 = 6)$, what will be the value of $(5\#2)$? (IBA BBA '14)

- ক 11 খ 19
 গ 23 ঘ 25
 ঙ none of these

৫. A notation $\#$ is defined as $a \# b = 4a^2 + 4b^2 + 8ab$ for all non-negative integers. What is the value of $(x+y)+6$ when $x\#y = 144$? (IBA BBA '12)

- ক 1.0 খ . 6
 গ I. 12 ঘ Only I
 ঙ Only II চ only III
 ৭ both I & II ৮ both I & III

৬. If c and d are two integers and $@$ is an operator such that $@(p, q) = (p + 1)(q + 2)$. If $@(c, d)$ equals the product of 3 and 5, then what should be the value of $(c + d)$? (IBA MBA '14)

- ক 11 খ 0
 গ 5 ঘ 6
 ঙ None of these

৭. If ϕ is a function such that $x \phi y = (x - y)^2$, then what will be the value of $[x \phi (x - y)] \phi [y \phi (y - x)]$? (IBA BBA '12)

- ক $(xy)^4$ খ $(x^2 - y^2)^2$
 গ $x^4 - y^4$ ঘ x^4
 ঙ none of these

৮. If the symbol $\bar{v}$ is such that $[a\bar{v}b = (a + b)^2]$, then $[a\bar{v}(1 - a)]\bar{v}(a^2 - 1) = ?$ (IBA MBA '12 (1))

- ক a^4 খ $4a^2$
 গ a^5 ঘ $a^3 - 1$
 ঙ None of these

উত্তরমালা

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Algebraic Expressions & Identities

Algebraic Expressions & Identities — IBA past-paper practice, ordered easiest → toughest.

Practice — Algebraic Expressions & Identities

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. $(\sqrt{3} - 2)(\sqrt{3} + 2) = ?$ (IBA BBA '05)

- ক $\sqrt{3} - 4$ খ $\sqrt{6} - 4$
 গ -1 ঘ 1
 ঙ None of these

২. If $x \neq 0$, then $\frac{x+7}{7}x - \frac{1}{x} = ?$ (IBA BBA '08)

- ক $(x+6)/6x$ খ $(x+6)/7x$
 গ $(-6x+7)/7x$ ঘ $1/7$
 ঙ none of these

৩. Which of the following equals $x + xy + (x + xy)y$? (IBA MBA '10)

- ক $x(1 + y)^2$ খ $x(2 + y + y^2)$
 গ $2x(1 + y) + y$ ঘ $2xy(1 + y)$
 ঙ None of these

৪. If the value of X and Y in $\frac{XZ}{Y}$ are both tripled, how does the value of $\frac{XZ}{Y}$ change? (IBA MBA '10)

- ক increase by half খ decrease by half
 গ triples ঘ remains the same
 ঙ None of these

৫. $(\frac{1}{4})^3 + (\frac{3}{4})^3 + 3(\frac{1}{4})(\frac{3}{4})(\frac{1}{4} + \frac{3}{4}) = ?$ (IBA MBA '08)

- ক $\frac{1}{64}$ খ $\frac{27}{64}$
 গ $\frac{49}{64}$ ঘ 1
 ঙ None of these

৬. The length of rectangular field X is 2 kilometers greater than the side of a square field Y and the width of the field X is 2 kilometers less than the side of field Y. If y^2 is the area of Y in square kilometers, which of the following gives the area, in square kilometers, of field X? (IBA MBA '04)

- ক $y^2 - 4$ খ $y^2 - 2$
 গ y^2 ঘ $y^2 + 2$
 ঙ $y^2 + 4$

৭. In the expression of $(x - y)^3$, the coefficient of y^2 is : (IBA BBA '97)

- ক $-3a^2$ খ $3a$
 গ 3 ঘ -3
 ঙ none of these

৮. If $2a + 3b = 8$ and $ab = 4$, then what is the value of $(\frac{6}{a} + \frac{4}{b})$? (IBA MBA '11 (2))

- ক 3 খ 3.5
 গ 4 ঘ 4.5
 ঙ None of these

৯. What must be added to x/y to make $2y/x$? (IBA BBA '96)

- ক $2\frac{x^2}{y}$ খ $\frac{xy-y^2}{x}y$
 গ $\frac{2y^2-x^2}{x}y$ ঘ x/y
 ঙ none of these

১০. If $(x - y)^2 = 12$ and $xy = 1$, then $x^2 - y^2 = ?$ (IBA BBA '98)

- ক 10 খ 11
 গ 12 ঘ 13
 ঙ 14

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Ratios, Mixtures & Averages

বিষয়	পৃষ্ঠা
Fraction Word Problems	৩২
Averages	৩৪
Ratios and Proportions	৩৬
Mixture	৩৮

Fraction Word Problems

Fraction Word Problems — IBA past-paper practice, ordered easiest → toughest.

Practice — Fraction Word Problems

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. The cost of two litres of Oil and its container is Tk. 100. If the cost of the container is Tk. 23 less than the cost of one litre of Oil, what is the cost of one litre of Oil? (IBA BBA '02)

- ক 39 খ 41
গ 43 ঘ 47
ঙ none of these

২. At a club, 70% of the members are woman and 60% of the members are married. If $\frac{2}{3}$ of the men is single, what fraction of the women is married? (IBA MBA '00)

- ক $\frac{5}{7}$ খ $\frac{7}{10}$
গ $\frac{1}{3}$ ঘ $\frac{7}{30}$
ঙ None of these

৩. A long rope has to be cut to make 23 small pieces. If it is double folded to start with, how many times does it need to be cut? (IBA BBA '19)

- ক 9 খ 11
গ 12 ঘ 23
ঙ none of these

৪. A company rents parking spaces at the rate of Tk. 100 per week or Tk. 300 per month. How much does a person save in a year (in Taka) by renting by month rather than by week? (IBA BBA '11)

- ক 1200 খ 1600
গ 2200 ঘ 2400
ঙ None of these

৫. Sabina needs to make a cake and some cookies. The cake requires $\frac{3}{8}$ cup of sugar and the cookies require $\frac{3}{5}$ cup of sugar. Sabina has $\frac{15}{16}$ cup of sugar. Does she have enough sugar, or how much more does she need? (IBA BBA '09)

- ক She has enough sugar
খ She needs $\frac{1}{8}$ of a cup of sugar
গ She needs $\frac{3}{80}$ of a cup of sugar 80
ঘ She needs $\frac{4}{19}$ of a cup of sugar
ঙ none of these

৬. A hunting lodge has enough fuel to keep 20 rooms heated for fourteen days. If the lodge decides to save fuel by turning off the heat in 5 unoccupied rooms, and each room requires the same amount of fuel to heat it, how many extra FULL days will the fuel supply last? (IBA MBA '20)

- ক 3 খ 4
গ 5 ঘ 18
ঙ 19

৭. Jar A has twice the capacity of jar B. Jar A is 50% full of water and jar B is 50% full of orange juice. If half the juice of jar B is poured into jar A, then jar A will be filled to what fraction of its capacity? (IBA MBA '12 (2))

- ক $\frac{1}{2}$ খ $\frac{5}{8}$
গ $\frac{3}{4}$ ঘ $\frac{7}{8}$
ঙ None of these

৮. In a room, all except 18 of the people are above 50 years of age. If 15 of the people in the room are under 50 years of age, how many people are in the room? (IBA MBA '10)

- ক 27 খ 30
গ 33 ঘ 36
ঙ None of these

৯. At a photocopy center, the first 10 copies cost .x Taka each. Each of the next 50 copies costs 2 Taka less per copy. From the 61st copy, the cost is 1 Taka per copy. In terms of x how much does it cost in Taka to have 200 copies made? (IBA BBA '06)

- ক $10x+240$ খ $50x-10$
গ $50(x-5)$ ঘ $60x-110$
ঙ None of these

১০. Among the members of a club there are three times as many engineers as doctors. Half of the club members are female and $\frac{4}{5}$ of the male members are doctors. What percent of the club members are female engineers? (IBA MBA '16 (2))

- ক 10 খ 15
গ 20 ঘ 25
ঙ None of these



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Averages

Averages — IBA past-paper practice, ordered easiest → toughest.

Practice — Averages

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. The average of two numbers is $2x+1$. If one of the numbers is $x-2$, then the other number is (IBA BBA '12)

- ক $x+1$ খ $2x+2$
 গ $3x+4$ ঘ $4x-1$
 ঙ none of these

২. If m is the average of the first 10 positive multiples of 5 and if M is the median of the first 10 positive multiple of 5, what is the value of $M-m$? (IBA BBA '05)

- ক -5 খ 0
 গ 5 ঘ 25
 ঙ None of these

৩. A batsman makes a score of 87 runs on the 17th inning and thus increases his average by 3. What is his average after 17th inning? (IBA MBA '16 (1))

- ক 23 খ 34
 গ 39 ঘ 44
 ঙ None of these

৪. A garments worker is paid d Takas per hour for the first 8 hours she works in a day. For every hour after the first 8 hours, she is paid c Takas per hour. If she works 12 hours in one day, what is her average hourly wage for that day? (IBA MBA '00)

- ক $\frac{2d+c}{3}$
 খ $8d+4c$
 গ $\frac{8d+12c}{12}$
 ঘ $\frac{4d+8c}{12}$
 ঙ $d + \left(\frac{1}{3}\right)c$

৫. The average of 5 positive integers is 60. If the average of 3 of these integers is 67, what is the greatest possible value that one of the other two integers can have? (IBA BBA '09)

- ক 98.5 খ 63.5
 গ 99 ঘ 98
 ঙ cannot be determined

৬. The average (arithmetic mean) of 8 consecutive odd integers is 400. Which is the least of these integers? (IBA MBA '12 (2))

- ক 389 খ 391
 গ 393 ঘ 395
 ঙ None of these

৭. Arif appeared in 9 subjects in his class IX exam. His score in mathematics was 2 times the average of his scores in the rest 8 subjects. If his total score was x , then what was his score in mathematics in terms of x ? (IBA MBA '11 (1))

- ক $\frac{1}{3}x$ খ $\frac{1}{4}x$
 গ $\frac{1}{5}x$ ঘ $\frac{1}{6}x$
 ঙ None of these

৮. A worker is paid Tk. 40 per hour for the first 8 hours and then Tk. 52 for each additional hour. If on a certain day, his average pay was Tk. 44 per hour, how many hours did he work on that day? (IBA BBA '02)

- ক 12 খ 10
 গ 8 ঘ 4
 ঙ none of these

৯. The average price of a new car increased by 20% from 1990 to 1995, and again increased by 20% from 1995 to 2000. If the average price of a new car was Tk. 450,000 in 1995, what is the difference in average price of a car between year 1990 and 2000? (IBA BBA '00)

- ক Tk. 120,000 খ Tk. 145,000
 গ Tk. 165,000 ঘ Tk. 175,000
 ঙ none of these

১০. x & y are positive integers & $\frac{10x}{x+y} + \frac{20y}{x+y} = k$. What could be the value of k if $x < y$? (IBA MBA '12 (1))

- ক 10 খ 12
 গ 15 ঘ 18
 ঙ None of these

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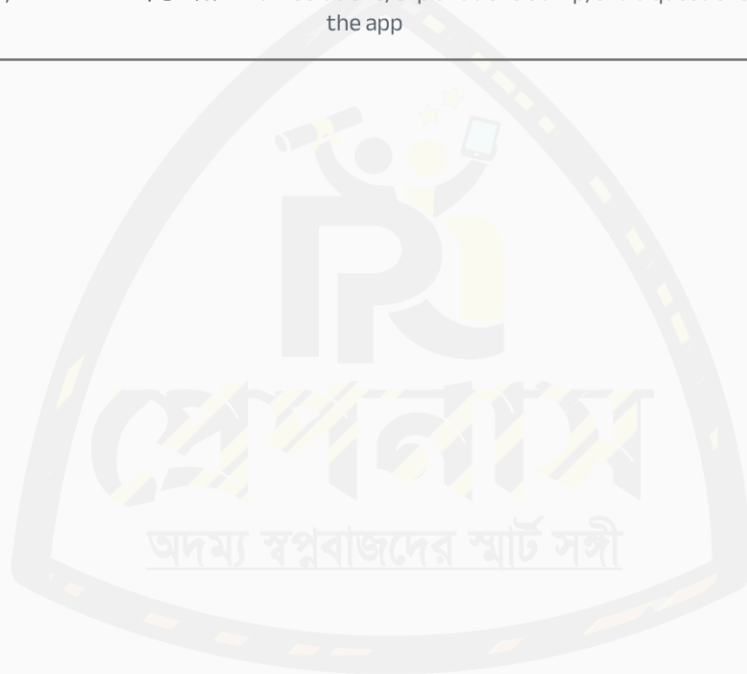
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Ratios and Proportions

Ratios and Proportions — IBA past-paper practice, ordered easiest → toughest.

Practice — Ratios and Proportions

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. In a wildfire haven, ratio of giraffes to zebras is 37:43. If there are 300 more zebras than giraffes, how many giraffes are there? (IBA MBA '24)

- ক 1560 খ 1850
গ 2060 ঘ 2150
ঙ none of these

২. Arif's salary is twice that of Babu's salary. Kabir's salary is one third of Arif's salary and Malek's salary is two third of that of Babu. The total salary of Kabir and Malek is what proportion of Babu's Salary? (IBA MBA '16 (2))

- ক $\frac{4}{3}$ খ $\frac{6}{5}$
গ $\frac{11}{12}$ ঘ $\frac{13}{15}$
ঙ None of these

৩. The difference of two numbers equals 60% of the smaller number to the bigger number. What is the ratio of the bigger number to the smaller number? (IBA BBA '12)

- ক 5:3 খ 7:4
গ 8:5 ঘ 9:7
ঙ none of these

৪. Mr. Noman is in charge of a special snake farm in Gaibandha. The farm has two types of snakes; Cobras and Pythons. After a recent stock taking he was surprised to find that $\frac{1}{4}$ of the number of cobras in the farm was exactly equal to $\frac{1}{6}$ of the total number of snakes in the farm. What is the ratio of the number of Pythons to the number of Cobras in the farm? (IBA BBA '09)

- ক 1:4 খ 1:3
গ 1:2 ঘ 2:3
ঙ cannot be determined

৫. Tanim's salary is 150% of Jamal's salary. Jamal's salary is 80% of Shakil's salary. What is the ratio of Shakil's salary to Tanim's salary? (IBA MBA '11 (1))

- ক 5:6 খ 5:7
গ 5:8 ঘ 6:5
ঙ None of these

৬. In a sugar-water solution, the ratio of water to sugar is 8:3. If you add 2 kgs of sugar, the ratio becomes 2:1. What is the amount of sugar in the original solution in kg? (IBA MBA '02)

- ক 3 খ 4.5
গ 6 ঘ 8
ঙ None of these

৭. The ratio of x to y is 0.75. If the ratio of $4y + 7$ to $x + 1$ is 5, then what is the value of y ? (IBA BBA '01)

- ক 2 খ 3
গ -2 ঘ 3
ঙ none of these

৮. A company paid Tk. 500,000 in merit raises to employees whose performance were rated A, B, or C. Each employee rated A received twice the amount of the raise that was paid to each employee rated C, each employee rated B received 1.5 times the amount of the raise that was paid to each employee rated C. If 50 workers were rated A, 100 were rated B, and 150 were rated C, how much was the raise paid to each employee rated A? (IBA BBA '13)

- ক Tk. 370 খ Tk. 625
গ Tk. 740 ঘ Tk. 1250
ঙ Tk. 2500

৯. The ratio of income of Kamran and Dolon is 3:4. The ratio of their expenditures is 4:5. Find the ratio of their savings if the savings of Kamran is one fourth of his income? (IBA MBA '09)

- ক 5:4 খ 19:12
গ 4:6 ঘ 12:19
ঙ 10:20

১০. If $y \frac{x}{z^2} = 27$ and $\frac{y^2}{z} x = \frac{1}{3\sqrt{3}}$, what is the ratio of z to y ? (IBA BBA '02)

- ক $\sqrt{3}$ খ $\frac{\sqrt{3}}{3}$
গ $\frac{1}{3}$ ঘ $3\sqrt{3}$
ঙ none of these



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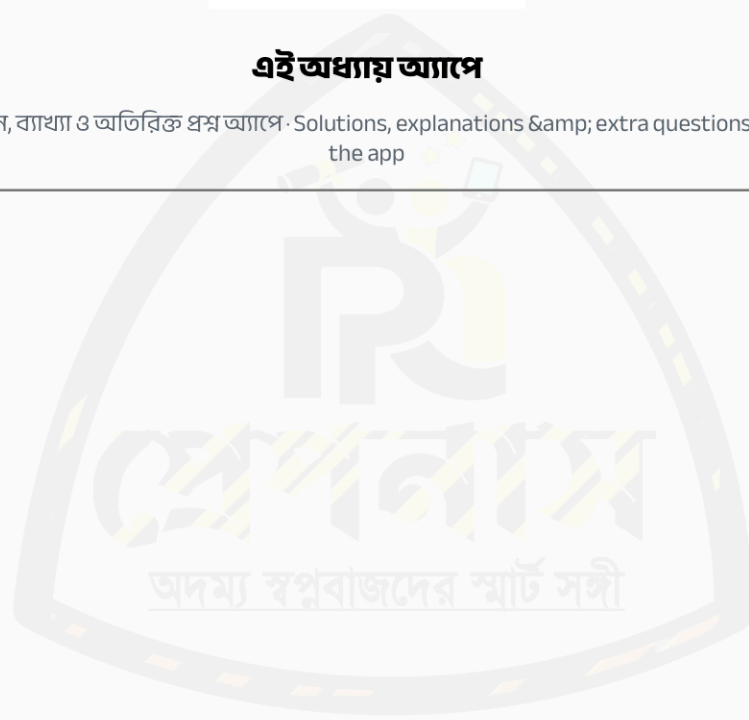
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Mixture

Mixture — IBA past-paper practice, ordered easiest → toughest.

Practice — Mixture

প্রশ্ন ১-১: Read each problem carefully. Pick the option that solves the equation.

১. A 16 ounce jar of birdseed is 10% sesame. How much sesame must be added to make the jar 20% sesame? (IBA MBA '20)

- ক 1 ounce খ 1.6 ounce
গ 2 ounce ঘ 2.4 ounce
ঙ 4 ounce

২. Coffee A normally costs 100 taka per pound. It is mixed with coffee B, which normally costs 70 taka per pound, to form a mixture which costs 88 taka per pound. If there are 10 pounds of the mix, how many pounds of coffee A are used in the mix? (IBA MBA '01)

- ক 4 খ 5
গ 6 ঘ 7
ঙ None of these

প্রশ্ন ৩-১০: Read each problem carefully. Pick the option that solves the equation.

৩. How many litres of water should be added to a 30 litre mixture of milk and water containing milk and water in the ratio of 7:3 such that the resultant mixture has 40% water in it? (IBA MBA '08)

- ক 7 খ 10
গ 5 ঘ 12
ঙ None of these

৪. A liter of water is evaporated from 8 liter of salt solution containing 5% salt. What will be the percentage of salt in the solution after evaporation? (IBA MBA '07)

- ক 6.2 খ 5.7
গ 7.2 ঘ 4.6
ঙ None of these

৫. The ratio of water and salt in a 16 kg of salt-water solution 3:1. How much water in kg must be added to make the ration of water to salt 4:1? (IBA BBA '01)

- ক 2 খ 3
গ 4 ঘ 6
ঙ none of these

৬. In 24 kg of salt water, 8% is salt; of another mixture, 4% is salt. How many kg of 2nd solution must be added to the first mixture to get a solution that is 5% salt? (IBA BBA '99)

- ক 24 খ 36
গ 48 ঘ 72
ঙ 96

৭. Three pipes A, B and C can fill a tank from empty to full in 30 minutes, 20 minutes, and 10 minutes respectively. When the tank is empty, all the three pipes are opened. A, B and C discharge chemical solutions P, Q and R respectively. What is the proportion of the solution R in the liquid in the tank after 3 minutes? (IBA BBA '13)

- ক 5/11 খ 6/11
গ 7/11 ঘ 8/11
ঙ 9/11

৮. A milk vendor has 2 cans of milk. The first can contains 25% water and the rest is milk. The second can contains 50% water. How much milk should he mix from each of the cans respectively so as to get 12 litres of milk such that the ratio of water to milk is 3:5 in that mixture? (IBA BBA '13)

- ক 4 litres, 8 litres খ 6 litres, 6 litres
গ 5 litres, 7 litres ঘ 7 litres, 5 litres
ঙ 8 litres, 9 litres

৯. A trader purchases blue paint and yellow paint at a price of Tk. 110 and Tk. 100 per litre respectively. He mixes blue and yellow paint at a ratio of 1:2 to make a certain paint of green color. He sells the green paint at a price of Tk. 120 per litre. If the trader makes a profit of Tk. 2000, how much yellow paint (in kgs) did he use in the mixture? (IBA BBA '12)

- ক 72 খ 80
গ 85 ঘ 90
ঙ none of these



১০. Jasim bought two varieties of rice, costing Tk. 50 and Tk. 60 per kg each and mixed them in some ratio. Then he sold the mixture at Tk. 70 per kg, making a profit of 20 percent. What was the ratio of the mixture? (IBA MBA '14)

- ক 1:10
গ 2:7
ঙ None of these

- খ 1:5
ঘ 3:8

উত্তরমালা

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অদম্য স্বপ্নবাজদের স্মার্ট সঙ্গী

Commercial Mathematics

বিষয়	পৃষ্ঠা
Percentages	৪১
Profit-Loss and Discounts	৪৩
Simple and Compound Interests	৪৫

অদম্য স্বপ্নবাজদের স্মার্ট সঙ্গী

Percentages

Percentages — IBA past-paper practice, ordered easiest → toughest.

Practice — Percentages

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. If the length of each sides of three square garden plots is increased by 50%, by what percent is the sum of the areas of the three plots increased? (IBA BBA '13)

- ক 375% খ 200%
গ 150% ঘ 125%
ঙ 50%

২. In a small town, there were 3300 registered voters, 75 percent of whom voted in an election. If Hanson received 594 votes, what percent of the vote did he receive? (IBA MBA '25)

- ক 21% খ 24%
গ 26% ঘ 28%
ঙ 32%

৩. This year, a city has allotted 60 percent of its budget for school expenditures and its budget is 15 percent higher than last year's budget of n dollars. In terms of n , how many dollars of this year's budget has the city allotted for school expenditure? (IBA MBA '10)

- ক $(0.6)(0.85n)$ খ $(0.6)(1.15n)$
গ $\frac{0.6}{1.15n}$ ঘ $\frac{0.85n}{0.6}$
ঙ None of these

৪. In January, 55 percent of a hospital's 300 patients were women. In February, 30 percent of its 440 patients were women. What was the percent change in the number of women patients from January to February? (IBA BBA '08)

- ক decrease of 20% খ increase of 20%
গ decrease of 25% ঘ increase of 25%
ঙ increase of 46.67%

৫. A colony of 15,000 ants increased by 50% after being fed. Then after 4 weeks without food, the number of ants dropped by 60%. What percentage decline did the original population undergo? (IBA BBA '07)

- ক 72.5 খ 75
গ 90 ঘ 95.5
ঙ none of these

৬. A box contains a mix of blue and white balls, where 40% of the balls are blue and 60% are white. If 3 white balls are converted or moved into blue balls, the overall percentage of blue balls increases by 5%. How many blue and white balls were initially in the box? (IBA MBA '22)

- ক 20 blue, 30 white খ 24 blue, 36 white
গ 40 blue, 60 white ঘ 60 blue, 90 white
ঙ 80 blue, 120 white

৭. In a club one half of the members are male and the other half of the members are female. Forty percent of the members are engineers and the rest are architects. If 15% of the members are male engineers, what percent of the members are female architects? (IBA MBA '16 (1))

- ক 15 খ 25
গ 30 ঘ 35
ঙ None of these

৮. A TV and a computer have the same price. If the price of the TV goes up by 20% and that of the computer goes down by 10%, how much more will it cost to buy 4 TVs and 4 computers? (IBA BBA '16)

- ক 5% খ 1%
গ 15% ঘ 20%
ঙ none of these

৯. Forty percent of the employees of a certain company are men and 75% of the earn more than Tk 25,000 per month. If 45% of all the employees earn more than Tk 25,000 per year, what fraction of the women employed by the company earn Tk 25,000 per month or less? (IBA BBA '04)

- ক $\frac{2}{11}$ খ $\frac{1}{4}$
গ $\frac{1}{3}$ ঘ $\frac{2}{3}$
ঙ none of these



১০. Hamid sold a certain number of B-grade papers for Tk 1.00 each and a certain number of A-grade papers for Tk 1.25 each. He did not sell any other type. If r percent of the store's revenues came from B-grade paper and if p percent of the papers sold were of B-graded, which of the following expresses r in terms of p ? (IBA MBA '24)

ক $100 \frac{p}{125-p}$

খ $\frac{p}{500-100p}$

গ $400 \frac{p}{500-p}$

ঘ $500 \frac{p}{125-100p}$

ঙ none of these

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Profit-Loss and Discounts

Profit-Loss and Discounts — IBA past-paper practice, ordered easiest → toughest.

Practice — Profit-Loss and Discounts

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. A wholesaler bought 2100 MBA admission guide books for taka 20 each. The wholesaler sold 50 percent of the books for taka 35 each and the rest for taka 18 each. What was the wholesaler's average profit per book? (IBA MBA '09)

- ক) taka 6.5 খ) taka 13
গ) taka 7 ঘ) taka 5
ঙ) taka 3.33

২. Asit buys 100 shares of stock at Tk. 100 per share. The price goes up by 10% and he sells 50 shares. Then, price drops by 10% and he sells his remaining 50 shares. How much did he get for the last 50 shares? (IBA BBA '15)

- ক) Tk. 5000 খ) Tk. 5500
গ) Tk. 4900 ঘ) Tk. 5050
ঙ) Tk. 4950

৩. A store charges Tk 52 for a video game. This price is 30% greater than the store's cost to buy the game from its supplier. As an incentive to the store's clerks, the manager allows a clerk to purchase the video game for 10% less than the store's cost. How much would a store clerk have to pay for this video game? (IBA BBA '13)

- ক) Tk 15.60 খ) Tk 20.80
গ) Tk 31.20 ঘ) Tk 32.76
ঙ) Tk 36.00

৪. When the per unit production cost of an item is Tk 80 and other costs per unit is Tk 20, the producer makes a profit of 15% on his total cost. If the production cost decreases by 20% and the selling price remains the same, calculate the profit in Tk. (IBA BBA '07)

- ক) 31 খ) 34
গ) 35 ঘ) 43
ঙ) none of these

৫. A seller of pen was asking for such price that would enable him to offer 10% discount and still make a profit of 20% on cost. If the cost of a pen was Tk. 30, what was his asking price? (IBA BBA '99)

- ক) Tk. 32 খ) Tk. 36
গ) Tk. 40 ঘ) Tk. 42
ঙ) none of these

৬. One laptop seller is planning to increase the price/laptop by BDT 10,000 from the next month. Market research shows that with this increase in price he will be able to sell 6 fewer laptops in the next month but the total revenue will increase by BDT 32,000 to BDT 760,000. What is the number of laptops the seller will sell in the next month at this new price? (IBA BBA '19)

- ক) 16 খ) 20
গ) 26 ঘ) 32
ঙ) 36

৭. Anwar bought a pen and sold it at 10% profit. If the purchase price was 10% less and the selling price was Tk. 5 less, then he would have made a profit of 20%. What was the cost of the pen? (IBA MBA '24)

- ক) Tk 200 খ) Tk 250
গ) Tk 300 ঘ) Tk 350
ঙ) none of these

৮. The cost price of two articles, P and Q are in the ratio 5:7 and their selling prices, in the ratio 2:5 respectively. If the losses of both the products are the same, what is the ratio between the cost price and the selling price of Q? (IBA MBA '17 (2))

- ক) 5:4 খ) 7:3
গ) 8:3 ঘ) 15:4
ঙ) None of these

৯. By selling an article at 80% of its marked price, a merchant makes a loss of 12%. What will be the profit/loss made by the merchant if he sells the article at 95% of its marked price? (IBA MBA '15 (2))

- ক) 5% profit খ) 1% loss
গ) 5.5% profit ঘ) 4.5% profit
ঙ) none of these



১০. A seller bought some pens at a rate of 5 for Tk. 100. They were separated into two stacks. One of which was sold at a rate of 3 for Tk. 100 and the other at a rate of 6 for Tk. 100. What was the ratio of the number of pens in the two stacks if the seller made no overall profit or loss? (IBA MBA '12 (2))

- ক 1:4
গ 2:3
ঙ 2:5

- খ 1:5
ঘ 1:2

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Simple and Compound Interests

Simple and Compound Interests — IBA past-paper practice, ordered easiest → toughest.

Practice — Simple and Compound Interests

প্রশ্ন ১-৫: Read each problem carefully. Pick the option that solves the equation.

১. Mr. Zaman is planning to buy a television after two years time from now. He expects that after two years he will need Tk. 12,100 to buy the television. How much money does Mr. Zaman need to invest now at 10% interest rate compounded annually? (IBA BBA '09)

- ☐ ক Tk. 10,000 ☐ খ Tk. 13,350
☐ গ Tk. 13,310 ☐ ঘ Tk. 14,250
☐ ঙ Tk. 11,000

২. If an amount kept for a year gives 12.5% interest, then in how many years the cumulative interest generated will be equal to the principal amount? (IBA MBA '20)

- ☐ ক 3 ☐ খ 5
☐ গ 6 ☐ ঘ 7
☐ ঙ None of these

৩. A man deposited Tk. 50,000 at a certain interest for 1 year. After 1 year, he received Tk. 55,280 as both principal and interest after deduction of Tk. 120 as government levy and 10% on interest as government tax. What was the interest rate in percentage? (IBA MBA '07)

- ☐ ক 12 ☐ খ 12.5
☐ গ 13 ☐ ঘ 15
☐ ঙ None of these

৪. Tk. 2000 is deposited in a savings account which pays 6% annual interest compounded semi-annually. To the nearest Taka, how much is in the account at the end of the year? (IBA MBA '05)

- ☐ ক Tk. 2060 ☐ খ Tk. 2120
☐ গ Tk. 2122 ☐ ঘ Tk. 2247
☐ ঙ Tk. 2258

৫. Arman wanted to have Tk. 39,200 as interest after 5 years. He has invested an amount in an account for 1 year at 8% interest rate. From the 2nd year, he invested the principal amount in another account offering 10% interest for 3 years. At the beginning of the fifth year he invested the principal amount in another account at the rate of 11%. What was the principal amount? (assume simple interest rate) (IBA BBA '09)

- ☐ ক Tk. 50,000 ☐ খ Tk. 80,000
☐ গ Tk. 90,000 ☐ ঘ Tk. 70,000
☐ ঙ none of these

উত্তরমালা

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Time, Speed & Work

বিষয়	পৃষ্ঠা
Time and Work	৪৮
Time and Speed	৫০
Problems on Trains, Boats & Streams: Relative speed applications in linear motion	৫২
Races & Games: Circular tracks, head starts, meeting points, and winning margins	৫৪

Time and Work

Time and Work — IBA past-paper practice, ordered easiest → toughest.

Practice — Time and Work

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. 55 men can finish a work in 42 days. How many additional men must be engaged to complete the work 9 days earlier? (IBA MBA '07)

- ক 15 খ 16
গ 17 ঘ 18
ঙ None of these

২. It takes 24 hours for 10 men to make 15 Christmas cakes. How many cakes can be made if 8 men work for 36 hours? (IBA BBA '12)

- ক 12 খ 15
গ 18 ঘ 24
ঙ none of these

৩. Company PQR has 3 machines. Machine A takes 5 minutes to produce the item, machine B takes 12 minutes to produce 2 and machine C takes 10 minutes to produce the item. If they run simultaneously how many hours will it take to produce 294 of the said item? (IBA MBA '19)

- ক 10 খ 10.5
গ 11 ঘ 630
ঙ none of these

৪. A female worker can do a job in 12 hours and a male member can do the same job in 6 hours. If equal numbers of male and female members were deployed to do that job and the team completed the job in 2 hours, how many male workers were employed? (IBA MBA '15 (2))

- ক 1 খ 2
গ 3 ঘ 4
ঙ none of these

৫. A teacher has 3 hours to grade all the papers submitted by the 35 students in her class. She gets through the first 5 papers in 30 minutes. How much faster does she have to work to grade the remaining papers in the allotted time? (IBA BBA '15)

- ক 10% খ 15%
গ 20% ঘ 25%
ঙ none of these

৬. A can complete a project in 20 days and B can complete the same project in 30 days. If A and B start working on the project together and A quits 10 days before the project is completed, in how many days will the project be completed? (IBA BBA '08)

- ক 15 খ 16
গ 18 ঘ 21
ঙ none of these

৭. If 30 men renovate $\frac{1}{2}$ of room space in 120 days, how many days would 80 men require to renovate $\frac{1}{3}$ of the remaining room space, assuming each person work at the same rate? (IBA MBA '18)

- ক 15 খ 30
গ 60 ঘ 120
ঙ None of these

৮. Fifteen men take 21 days of 8 hours each to do a piece of work. How many days of 6 hours each would 21 women take, if 3 women do as much work as 2 men do? (IBA MBA '15 (1))

- ক 25 খ 28
গ 30 ঘ 36
ঙ None of these

৯. Karim takes 2 days longer than Rahim to produce x units of products. At these rates, Karim & Rahim together take 2 days to produce $\frac{5}{6}$ of x units. How many days would Karim take to produce 3x units of this product? (IBA BBA '19)

- ক 4 days খ 6 days
গ 12 days ঘ 18 days
ঙ None of these

১০. 2 men and 5 women completed only $\frac{1}{4}$ th portion of a job in 3 days. After 3 days another man was included in the team and in 2 days they completed another $\frac{1}{4}$ th portion of the job. How many men (with no women) can complete the whole job in 4 days? (IBA BBA '96)

- ক 12 খ 8
গ 6 ঘ 4
ঙ none of these



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প্রেপনাস

অদম্য স্বপ্নবাজদের স্মার্ট সঙ্গী

Time and Speed

Time and Speed — IBA past-paper practice, ordered easiest → toughest.

Practice — Time and Speed

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. A bicycle has two wheels (one large and one small) of 120 cm and 40 cm in diameter respectively. When the large wheel makes 10 revolutions, how many revolutions does the small wheel make in that time? (IBA BBA '15)

- ক 15 খ 20
গ 30 ঘ 40
ঙ none of these

২. A train when moves at an average speed of 75 km/hr. reaches its destination on time. When its average speed becomes 50 km/hr. it takes 1 more hour to reach its destination. Find the length of journey in km. (IBA MBA '17 (2))

- ক 150 খ 180
গ 200 ঘ 240
ঙ None of these

৩. A motorcycle stunt man belonging to a fair rides over the vertical walls of a circular wall at an average speed of 54 km/h for 5 minutes. If the radius of the wall is 5 meters then the distance traveled is - (IBA MBA '09)

- ক 2.5 km খ 3.5km
গ 5km ঘ 4.5km
ঙ None of these

৪. A car is traveling on a highway. At 10 am, it passes a truck traveling in the same direction. The truck continues on the highway traveling at 50 mph while the car travels at 65 mph. How far apart are the car and the truck at 2 pm? (IBA MBA '03)

- ক 15 miles খ 30 miles
গ 60 miles ঘ 200 miles
ঙ 260 miles

৫. Two cars start towards the same destination at the same time. One car is 5 km behind the other. If the speed of the car at the front is 750 m/min and that of the other car is 1000 m/min, after how many minutes will the two cars meet? (IBA BBA '99)

- ক 20 খ 24
গ 25 ঘ 30
ঙ none of these

৬. Asif, riding his bike at 24 km/h reaches his office 5 minutes late. If he would have reached the office 4 minutes earlier than the scheduled time by traveling 25% faster, how far is his office from his house in km? (IBA BBA '16)

- ক 18 খ 24
গ 36 ঘ 40
ঙ none of these

৭. The ratio of Arif's driving speed and that of Babu's is 2:3. If Arif starts at 7:15 am from point A to Point B and Babu starts from 8:15 am and both reach at 10:00 am and the distance between A and B is 42 km what is the driving speed of Babu km/hour? (IBA BBA '22)

- ক 21
খ 24
গ 14
ঘ 15
ঙ None of these

৮. Arif travels $\frac{1}{3}$ rd of the distance at an speed of 5 km/hr, $\frac{2}{5}$ th of the distance at an average speed of 4 km/hr and the last 12 miles in 2 hours. What is the total distance traveled by Arif? (IBA MBA '01)

- ক 45 খ 48
গ 52 ঘ 54
ঙ None of these



৯. A car traveled 75% of the way from town A to town B at an average speed of 50 miles/hour. The car travels at an average speed of S miles/hour for the remaining part of the trip. The average speed for the entire trip was 40 miles/hour. What is S ? (IBA MBA '04)

- (ক) 10 (খ) 20
(গ) 25 (ঘ) 30
(ঙ) 37.5

১০. A hiker walked for two days. On the second day the hiker walked four hours longer and his speed was 2 miles per hour faster than that of the first day. If during the two days he walked a total of 104 miles and spent a total of 20 hours, what was his average speed (miles/hour) on the first day? (IBA BBA '17)

- (ক) 2 (খ) 4
(গ) 5 (ঘ) 8
(ঙ) none of these

উত্তরমালা

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Problems on Trains, Boats & Streams: Relative speed applications in linear motion

Problems on Trains, Boats & Streams: Relative speed applications in linear motion — IBA past-paper practice, ordered easiest → toughest.

Practice — Problems on Trains, Boats & Streams: Relative speed applications in linear motion

১. A train covers the distance x between two cities in y hours, arriving 2 hours late. What rate would permit the train to arrive on schedule? (IBA MBA '01)

- ☐ ক $\frac{x}{y} - 2$ ☐ খ $\frac{x}{y-2}$
☐ গ $xy - 2$ ☐ ঘ $\frac{x}{y+2}$
☐ ঙ None of these

প্রশ্ন ২-৯: Read each problem carefully. Pick the option that solves the equation.

২. Two trains running on the same route at the rate of 25 and 30 miles per hour. If the first train starts out an hour earlier, how long will it take the second train to catch up with it? (IBA BBA '97)

- ☐ ক 5 hrs. ☐ খ 4 hrs.
☐ গ 3 hrs. ☐ ঘ 2 hrs.
☐ ঙ none of these

৩. At 9:00 a.m. train A left the Airport Railway Station and two hours later train B left the same station on a parallel track. If train A averaged 60 kilometers per hour and train B averaged 75 kilometers per hour until B passed A, at what time did B pass A? (IBA BBA '13)

- ☐ ক 2:00 p.m. ☐ খ 5:00 p.m.
☐ গ 6:00 p.m. ☐ ঘ 7:00 p.m.
☐ ঙ 9:00 p.m.

৪. Two trains start at the same time from Dhaka and Chittagong, travelling towards each other. 3 hours after they meet, they are 675 km apart. The first train arrives at its destination 16 hours after their meeting, and the second train arrives at its destination 25 hours after their meeting. How long did it take for the first train to make the whole trip? (IBA MBA '21)

- ☐ ক 18 hours ☐ খ 25 hours
☐ গ 36 hours ☐ ঘ 45 hours
☐ ঙ 48 hours

৫. Two trains are moving in opposite directions at 60 km/hr and 90 km/hr. Their lengths are 1.10 km and 0.9 km respectively. The time taken by the slower train to cross the faster train in seconds is: (IBA MBA '16 (1))

- ☐ ক 36 ☐ খ 45
☐ গ 48 ☐ ঘ 49
☐ ঙ None of these

৬. A train left Dhaka for Chittagong at 62 km per hour and at the same time another train left Chittagong for Dhaka at 48 km per hour on the same route. How far apart were the two trains one hour before they met? (IBA BBA '02)

- ☐ ক 80 ☐ খ 92
☐ গ 100 ☐ ঘ 110
☐ ঙ none of these

৭. A boat sailing against the currents takes 8 hours to travel 32 km. If it had been sailing with the current the time taken would have been only 4 hours. What is the speed of current? (IBA BBA '98)

- ☐ ক 3 km/hr ☐ খ 2.5 km/hr
☐ গ 2 km/hr ☐ ঘ 1 km/hr
☐ ঙ None of these

৮. Two boats on the opposite shores of a river start moving towards each other. When they pass each other they are 750 yards from one shoreline. They each continue to the opposite shore, immediately turn around and start back. When they meet again they are 250 yards from the other shoreline. Each boat maintains a constant speed throughout. How wide is the river? (IBA BBA '13)

- ☐ ক 2400 yards ☐ খ 3000 yards
☐ গ 2000 yards ☐ ঘ 4000 yards
☐ ঙ none of these



৯. Azam can swim 10 km upstream and 25 km downstream in 12 hours. He can also swim 15 km upstream and 50 km downstream in 20 hours. How many hours will it take for him to cover 17.5 km in downstream if the rate of current increases by 40%? (IBA MBA '18)

- (ক) 4.5 hours (খ) 4 hours
(গ) 3.5 hours (ঘ) 3 hours
(ঙ) None of these

উত্তরমালা

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অদম্য স্বপ্নবাজদের স্মার্ট সঙ্গী

Races & Games: Circular tracks, head starts, meeting points, and winning margins

Races & Games: Circular tracks, head starts, meeting points, and winning margins — IBA past-paper practice, ordered easiest → toughest.

Practice — Races & Games: Circular tracks, head starts, meeting points, and winning margins

প্রশ্ন ১-২: Read each problem carefully. Pick the option that solves the equation.

১. In a race, the speeds of A and B are in the ratio 3:4, A takes 30 minutes more than B takes to reach the destination. What is the time taken by A to reach the destination in hours? (IBA MBA '17 (2))

- ☐ ক 1
☐ গ 2
☐ ঙ None of these
☐ খ 1.5
☐ ঘ 3

২. On a track for remote-controlled racing cars, racing car A completes the track in 55 seconds, while racing car B completes it in 35 seconds. If they both start at the same time, after how many seconds will they be side by side again? (IBA MBA '15 (2))

- ☐ ক 275
☐ গ 385
☐ ঙ none of these
☐ খ 325
☐ ঘ 425

উত্তরমালা

১. গ

২. গ



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Miscellaneous Word Problems

বিষয়	পৃষ্ঠা
Age Problems	৫৬

অদম্য স্বপ্নবাজদের স্মার্ট সঙ্গী

Age Problems

Age Problems — IBA past-paper practice, ordered easiest → toughest.

Practice — Age Problems

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. After 30 years, Zaman will be four times as old as he is now. Find out his present age. (IBA BBA '96)

- ক 10 খ 11
গ 7.5 ঘ 30
ঙ none of these

২. Harun is three times as old as Tamim. In eight years, he will be twice as old as Tamim. How old was Harun 3 years ago? (IBA BBA '07)

- ক 27 খ 25
গ 24 ঘ 21
ঙ none of these

৩. A is three years older than B who is twice as old as C. If the total of the ages of A, B and C is 38, how old is B. (IBA MBA '17 (2))

- ক 10 খ 12
গ 14 ঘ 15
ঙ None of these

৪. Mr. Shohrab is 4 times as old as his son. Four years hence, the sum of their ages will be 43 years. The present age of the son is: (IBA MBA '11 (2))

- ক 5 খ 7
গ 8 ঘ 10
ঙ None of these

৫. Jamal is now 7 times as old as Jashim. If 10 years from now, he will be 3 times as old as Jashim, how old is Jamal now? (IBA MBA '11 (1))

- ক 14 খ 21
গ 28 ঘ 35
ঙ None of these

৬. Nishi is two years older than Mishi, who is twice as old as Rishi. If the ages of the 3 total 27 years, how old is Mishi? (IBA BBA '98)

- ক 12 years খ 8 years
গ 10 years ঘ 9 years
ঙ 5 years

৭. Rahman is twice as old as Shermin. In any years Shermin will be 1.5 times older than she is now. What is Shermin's age? (IBA BBA '05)

- ক $y/4$ খ $2y/3$
গ y ঘ $3y$
ঙ None of these

৮. The average age of 8 students is 20. The average age of first two students is 19 and that of the next three students is 21. If the age of the sixth student is less than that of the seventh and eighth student by 2 and 3 respectively, then find the age of the eighth student. (IBA MBA '17 (2))

- ক 18 খ 21
গ 24 ঘ 27
ঙ None of these

৯. Age of the father is equal to the sum of ages of his three sons. If in 19 years, one third of father's age will be equal to one fifth the sum of the ages of the sons. What is the age of the father? (IBA MBA '07)

- ক 28 খ 38
গ 48 ঘ 58
ঙ None of these

১০. Six years from now, Sumi's age will be the square of her age six years ago. What is Sumi's age? (IBA BBA '01)

- ক 8 খ 10
গ 12 ঘ 15
ঙ none of these



উত্তরমালা

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প্রেপনাস

অদম্য স্বপ্নবাজদের স্মার্ট সঙ্গী

Modern Mathematics & Data Sufficiency

বিষয়	পৃষ্ঠা
Permutation and Combinations	৫৯
Probability	৬০
Set Theory	৬২
Statistics	৬৪
Min-Max	৬৫
Must Be True	৬৭
Data Sufficiency Problems	৬৯

Permutation and Combinations

Permutation and Combinations — IBA past-paper practice, ordered easiest → toughest.

Practice — Permutation and Combinations

প্রশ্ন ১-৩: Read each problem carefully. Pick the option that solves the equation.

১. There are six different models who are to appear in a fashion show. Two are from Europe, two are from South America, and two are from North America. If all the models from the same continent are to stand next to each other, how many ways can the fashion show organizer arrange the models? (IBA BBA '13)

- ☐ ক 48 ☐ খ 64
☐ গ 24 ☐ ঘ 8
☐ ঙ 72

২. How many different 3 digit numbers can be formed, such that 1st and 3rd place should be filled up with odd numbers? (IBA BBA '17)

- ☐ ক 400 ☐ খ 250
☐ গ 150 ☐ ঘ 120
☐ ঙ None of these

৩. To unlock a secure laboratory door, researchers must enter a four-digit security code. Each digit can be any number from 0 to 9. The code must satisfy the following conditions:

- The first digit is 4.
- Exactly one of the remaining three digits (positions 2–4) is 1.
- All digits must be different (no repetition).

How many different security codes are possible? (IBA MBA '25)

- ☐ ক 56 ☐ খ 112
☐ গ 168 ☐ ঘ 192
☐ ঙ 216

উত্তরমালা

১. ক

২. খ

৩. গ



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Probability

Probability — IBA past-paper practice, ordered easiest → toughest.

Practice — Probability

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. Nine places of paper numbered consecutively from 1 to 9 are put into a box. If a piece of paper is drawn at random from the box, what is the probability that it will have a number greater than 6? (IBA MBA '10)

- ক $\frac{1}{9}$ খ $\frac{1}{3}$
 গ $\frac{2}{9}$ ঘ $\frac{5}{9}$
 ঙ None of these

২. There are 8 job applicants sitting in a waiting room - 4 women and 4 men. Two of the applicants are selected one after another at random. what is the probability that both will be women? (IBA BBA '06)

- ক $\frac{1}{2}$ খ $\frac{3}{7}$
 গ $\frac{1}{4}$ ঘ $\frac{3}{14}$
 ঙ None of these

৩. There are 4 women and 4 men sitting in a waiting room for job. If two of the applicants are selected at random, what is the probability that both will be women? (IBA MBA '10)

- ক $\frac{1}{2}$ খ $\frac{3}{7}$
 গ $\frac{3}{4}$ ঘ $\frac{3}{14}$
 ঙ None of these

৪. The probability of rolling any number on a weighted 6-sided die, with faces numbered 1 through 6, is directly proportional to the number rolled. What is the probability of getting 5, if the die is rolled only once? (IBA BBA '15)

- ক $\frac{1}{6}$ খ $\frac{5}{6}$
 গ $\frac{5}{16}$ ঘ $\frac{5}{21}$
 ঙ none of these

৫. If an integer is selected randomly and is divided by 7, what is the probability that the remainder is greater than 0 and NOT an even number? (IBA BBA '07)

- ক $\frac{1}{2}$ খ $\frac{3}{7}$
 গ $\frac{4}{7}$ ঘ $\frac{6}{7}$
 ঙ none of these

৬. There are 4 women and 4 men sitting in a waiting room for a job interview. If two of the interviewees are selected at random, what is the probability that both will be woman? (IBA MBA '16 (2))

- ক $\frac{1}{2}$ খ $\frac{3}{7}$
 গ $\frac{3}{4}$ ঘ $\frac{3}{14}$
 ঙ None of these

৭. A box contains 24 marbles, some are green and others are blue. If a marble is drawn at random from the jar, the probability that it is green is $\frac{2}{3}$. The number of blue balls in the jar is: (IBA BBA '22)

- ক 13
 খ 12
 গ 16
 ঘ 8
 ঙ None of these

৮. Eight women and two men are available to serve on a committee. If three people are picked, what is the probability that the committee includes at least one man? (IBA MBA '20)

- ক $\frac{1}{32}$ খ $\frac{1}{4}$
 গ $\frac{2}{5}$ ঘ $\frac{7}{15}$
 ঙ $\frac{8}{15}$

৯. There is 50% chance that Rafiq will go to a fast-food restaurant for lunch and 50% chance that he will skip lunch. If he goes to a fast-food restaurant there is 60% chance that he will take only a sandwich and nothing else. If he decides not to take a sandwich he will take a burger or a chicken pie. What is the probability that he will take a burger? (IBA BBA '16)

- ক 5% খ 1%
 গ 2% ঘ 2.5%
 ঙ none of these



১০. Five digits — 0, 5, 6, 7, and 9 — are entered into a security panel in some random order, but the system blocks any arrangement that begins with the digit 0. From all the allowed sequences, one is selected at random. What is the probability that the code appearing in the second position is 9? (IBA MBA '25)

- ☐ ক 1/2 ☐ খ 3/16
☐ গ 9/10 ☐ ঘ 3/11
☐ ঙ None of these

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Set Theory

Set Theory — IBA past-paper practice, ordered easiest → toughest.

Practice — Set Theory

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. In a survey of Chittagong City, it was found that 70% of the people surveyed watched television news, 35% read a newspaper, and 25% read a newspaper and watched television news. What percent of the people surveyed neither watched television news nor read a newspaper? (IBA MBA '00)

- ক) 30% খ) 20%
গ) 0% ঘ) 15%
ঙ) 5%

২. In a class of 82 students 46 are taking French 25, are taking German and 11 students are taking both French and German. How many students are not enrolled in either course? (IBA BBA '07)

- ক) 11 খ) 18
গ) 22 ঘ) 24
ঙ) none of these

৩. Of the 45 families in a locality, 25 families have working mothers and 10 families have retired individuals as members to look after the children at home. Of the families, 8 have both working mothers and retired individuals as members. How many of the families have working mothers but no retired individuals as members? (IBA BBA '06)

- ক) 0 খ) 2
গ) 18 ঘ) 17
ঙ) None of these

৪. In a group of 100 students, 45 play football and 38 play cricket. If 72 students play either football or cricket or both, then how many students play football but not cricket? (IBA MBA '15 (2))

- ক) 34 খ) 36
গ) 38 ঘ) 42
ঙ) none of these

৫. Of 45 families in a locality, 25 families have working mothers and 10 families have retired individuals as members to look after the children at home. Of the families, 8 have both working mothers and retired individuals as members. How many of the families have working mothers but no retired individuals as members? (IBA MBA '10)

- ক) 0 খ) 2
গ) 18 ঘ) 17
ঙ) None of these

৬. In a survey of the people in Chittagong, it was found that 65% of the people surveyed watched the news on televisions, 40% read a newspaper and 25% read a newspaper and watched the news on television. What percent of the people surveyed neither watched the news on neither television nor read a newspaper? (IBA MBA '04)

- ক) 0% খ) 5%
গ) 10% ঘ) 15%
ঙ) 20%

৭. Of 48 applicants, 28 had at least 5 years experience, 30 had MBA degree, and 10 had less than 5 years' experience and no MBA degree. How many of the applicants had at least 5 years' experience and an MBA degree? (IBA BBA '08)

- ক) 8 খ) 10
গ) 20 ঘ) 24
ঙ) none of these

৮. In an exam, 90% passed History and 85% passed English. If none of the students failed in both subjects and 225 passed in both subjects, calculate the number of students who have attended the exam. (IBA BBA '99)

- ক) 250 খ) 275
গ) 300 ঘ) 325
ঙ) none of these



৯. In a recent survey among 362 BBA students of IBA, 281 students responded that they watch IPL or English Premier League or both. If 97 of these students do not watch IPL and a total of 204 students watch English Premier League, how many of these students watch both? (IBA BBA '11)

- (ক) 12 (খ) 14
(গ) 18 (ঘ) 20
(ঙ) None of these

১০. 70 students are enrolled in Management, Accounting and Marketing, 40 students are in Management, 35 are Accounting and 30 are in Marketing. 15 students are enrolled in all three courses. How many of the students are enrolled in exactly two of the courses? (IBA MBA '10)

- (ক) 8 (খ) 5
(গ) 6 (ঘ) 9
(ঙ) None of these

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Statistics

Statistics — IBA past-paper practice, ordered easiest → toughest.

Practice — Statistics

প্রশ্ন ১-২: Read each problem carefully. Pick the option that solves the equation.

১. $S = \{16, 9, 23, X, 13, 16\}$ In list S, the mean, median, and mode are all equal to one another. What is the value of X? (IBA BBA '19)

- ক 15 খ 16
গ 19 ঘ 29
ঙ 36

২. What is the range of the dataset of numbers comprised entirely of $\{1, 6, x, 17, 20, y\}$ if all terms in the dataset are positive integers and $xy = 18$? (IBA MBA '20)

- ক 16
খ 17
গ 18
ঘ 19
ঙ It cannot be determined from the information given

উত্তরমালা

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Min-Max

Min-Max — IBA past-paper practice, ordered easiest → toughest.

Practice — Min-Max

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. The average weight of 3 men is 53 kg. None of them weighs less than 51 kg. What is the maximum possible weight (in kg) of a person in that group? (IBA BBA '99)

- ক 53 খ 55
গ 57 ঘ 59
ঙ none of these

২. The average weight of 3 young men is 53 kg. None of them weighs less than 51 kg. What is the maximum weight of any one man? (IBA BBA '05)

- ক 53 খ 14
গ 55 ঘ 59
ঙ None of these

৩. A total of 50,000 tk. is distributed among 20 persons such that each person receives at least 2,000 tk. If Ayon receives exactly 5,000 tk. more than Noyon, what is the maximum amount of money Ayon can receive? (IBA MBA '22)

- ক 7,500 tk. খ 9,000 tk.
গ 9,500 tk. ঘ 12,000 tk.
ঙ 14,000 tk.

৪. The average daily wages of 10 employees is Tk. 400. If the lowest wage is Tk. 300, what is the possible maximum wage in Tk? (IBA MBA '13)

- ক 800 খ 900
গ 1000 ঘ 1300
ঙ None of these

৫. If x and y are integers, 13 (IBA BBA '16)

- ক 13 খ 24
গ 25 ঘ 36
ঙ none of these

৬. The 356 members of Metro Chamber of Commerce will vote to choose a President. With 5 candidates seeking office, what is the least number of votes a successful candidate could receive and yet have more votes than any other candidate? (IBA MBA '00)

- ক 71 খ 72
গ 89 ঘ 178
ঙ 179

৭. 3 people are splitting a tk. 150 bill. If A pays tk. 5 less than B, while C pays more than tk. 60, what is the most A can pay, given all of them pay integer amounts? (IBA MBA '18)

- ক 29 খ 42
গ 47 ঘ 61
ঙ None of these

৮. If x, y, z are chosen from three numbers $\frac{1}{2}$, 2 and -3, what is the largest possible value of the expression $(\frac{x}{y})z^2$? (IBA MBA '11 (1))

- ক 16 খ 32
গ 36 ঘ 39
ঙ None of these

৯. Fill in each of the empty spaces between the numbers in the following series with symbols +, -, ÷ and × (use each symbol only once and no parenthesis). What is the least possible value of the result?

1 _ 3 _ 5 _ 6 _ 9 = ? (IBA BBA '19)

- ক -5.29 খ -57.67
গ -61.4 ঘ -2.3
ঙ -3.29

১০. If x, y, w and z correspond to four numbers - 3, $\frac{1}{2}$, -.4 and 2 but not necessarily in the same order, what is the largest possible value of the expression $(\frac{w}{y})z^2$? (IBA BBA '03)

- ক 92 খ 36
গ 24 ঘ 12
ঙ none of these

উত্তরমালা

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৯. গ

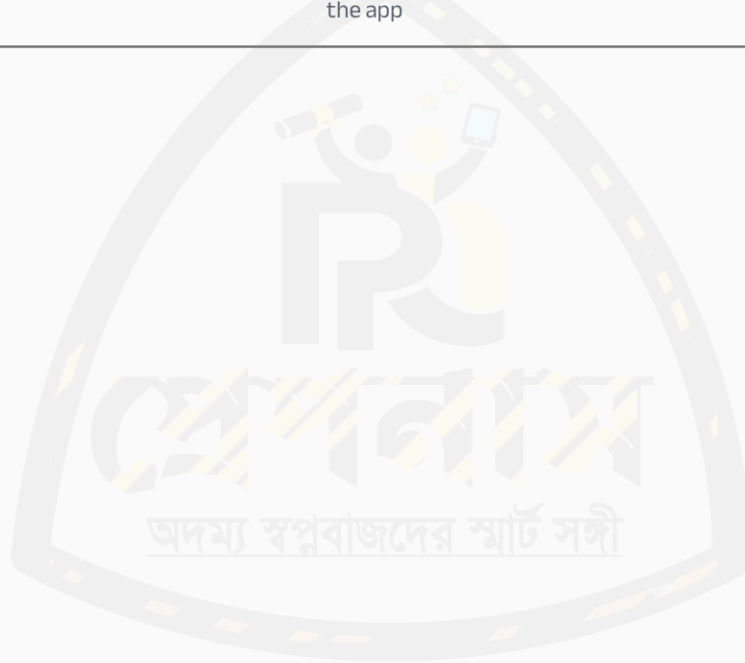
১০. উ

12 more questions available in the PrepNus app.



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Must Be True

Must Be True — IBA past-paper practice, ordered easiest → toughest.

Practice — Must Be True

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. If x is an integer such that $2x - 5 \leq 16$ and $5x - 7 > 26$, then which of the following must be true? (IBA BBA '12)

- ☐ ক $x \leq 10$ ☐ খ $x \geq 7$
☐ গ $8 \leq x \leq 12$ ☐ ঘ $7 \leq x \leq 10$
☐ ঙ none of these

২. If $x > 0$ and $y < 0$, which of the following must be true? (IBA MBA '13)

- ☐ ক $x + y > 0$ ☐ খ $x^2 - y^2 > 0$
☐ গ $y^2 - x > 0$ ☐ ঘ $y + x^2 > 0$
☐ ঙ None of these

৩. If $(2 + \sqrt{x}) > 2\sqrt{x}$, which of the following must be true? (IBA MBA '13)

- ☐ ক $x < 1$
☐ খ $x < 2$
☐ গ $x < 3$
☐ ঘ $x < 4$
☐ ঙ None of these

৪. If $x + y = z$ and x and y are positive, then which of the following statement can be inferred?

- I. $x < y$
 II. $x < z$
 III. $x < 2z$ (IBA MBA '04)

- ☐ ক I only ☐ খ II only
☐ গ I and II only ☐ ঘ II and III only
☐ ঙ I, II and III only

৫. If $x > z$ and $y < -z$, where z is a positive integer, then which of the following must be true? (IBA BBA '14)

- ☐ ক $x/y > 1$
☐ খ $x/y < -1$
☐ গ $x/y < 0$
☐ ঘ $x + y > 0$
☐ ঙ none of these.

৬. If $x > 0$, which of the following must be true?

- I. $x - x^2 < 0$
 II. $2x - 1 > 0$
 III. $x^2 - x^3 > 0$ (IBA MBA '16 (1))

- ☐ ক Only I ☐ খ Only II
☐ গ Only III ☐ ঘ All of these
☐ ঙ None of these

৭. If x and y are negative and z is positive, which of the following must be true?

- I. $(x - y) < (x - z)$
 II. $\frac{x}{z} < \frac{y}{z}$
 III. $\frac{1}{y} < \frac{1}{z}$ (IBA MBA '13)

- ☐ ক only I ☐ খ only II
☐ গ only III ☐ ঘ both II and III
☐ ঙ None of these

৮. If x is a positive integer and $y > -2$, which of the following must be positive? (IBA BBA '02)

- ☐ ক $3x + 4y$ ☐ খ $(x + y)/y$
☐ গ $(2x + y)/(x - y)$ ☐ ঘ xy
☐ ঙ none of these

৯. If $a > 0$, $b < 0$, $C > 1$ and $D < 1$, which of the following must be true? (IBA BBA '02)

- ☐ ক $ab > cd$
☐ খ $ab < cd$
☐ গ $ac > bd$
☐ ঘ $ac < db$
☐ ঙ none of these

১০. If $a > b$ and $a > c$, which of the following must be greater than 0? (IBA BBA '00)

- ☐ ক $\frac{b-c}{b+c}$ ☐ খ $\frac{c-b}{a+b}$
☐ গ $\frac{b-c}{b-c}$ ☐ ঘ $\frac{b-a}{c-a}$
☐ ঙ none of these

উত্তরমালা

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Data Sufficiency Problems

Data Sufficiency Problems — IBA past-paper practice, ordered easiest → toughest.

Practice — Data Sufficiency Problems

প্রশ্ন ১-২: Data Sufficiency (Math)

Questions 56 to 60: Instruction: Each question is following by two statements. Decide whether the data in the statements are sufficient to answer the question. Select your answer according to whether: A. Statement (1) alone is sufficient, but statement (2) alone is not sufficient to answer the questions. B. Statement (2) alone is sufficient, but statement (1) alone is not sufficient to answer the questions. C. Both statements taken together are sufficient to answer the question, but neither statement alone is sufficient. D. Each statement alone is sufficient. E. Statement (1) and (2) together are not sufficient, and additional data is needed to answer the question.

১. A box contains red chips, white chips and blue chips. If a chip is randomly selected from the box, what is the probability that the chip will be either white or blue?

- (1) The probability that the chip will be blue is $\frac{1}{5}$.
(2) The probability that the chip will be red is $\frac{1}{3}$. (IBA MBA '16 (1))

- ক Statement (1) alone is sufficient
খ Statement (2) alone is sufficient
গ Both statements taken together are sufficient
ঘ Each statement alone is sufficient
ঙ Statement (1) and (2) together are not sufficient

২. How many male members in the group of 100 members are from Chittagong?

- (1) Of the members, 60 percent are from Chittagong.
(2) Of the members, 40 are male. (IBA MBA '16 (1))

- ক Statement (1) alone is sufficient
খ Statement (2) alone is sufficient
গ Both statements taken together are sufficient
ঘ Each statement alone is sufficient
ঙ Statement (1) and (2) together are not sufficient

প্রশ্ন ৩-৫: Read each problem carefully. Pick the option that solves the equation.

Questions 70 to 74 Each data sufficiency problem consists of a question and two statements, labeled (1) and (2), that give data. You have to decide which statements are sufficient for answering the question. Select the appropriate answer as per the conditions.

৩. If x and y are integers, is $y > 0$?

- (1) $x + 1 > 0$
(2) $xy > 0$ (IBA BBA '16)

- ক Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient
খ Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient
গ BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient
ঘ EACH statement ALONE is sufficient
ঙ Statements (1) and (2) TOGETHER are NOT sufficient

Questions 57 to 60 Instruction: Each problem consists of a question followed by two statements. Decide whether the data in the statements are sufficient to answer the question. Select your answer according to whether: • (A) statement (1) alone is sufficient, but statement (2) alone is not sufficient to answer the question • (B) statement (2) alone is sufficient, but statement (1) alone is not sufficient to answer the question • (C) both statements taken together are sufficient to answer the question, but neither statement alone is sufficient • (D) each statement alone is sufficient • (E) statements (1) and (2) together are not sufficient, and additional data is needed to answer the question

৪. What was the percent increase in salary of Asif from 2013 to 2014?

- (1) In 2013, Asif's salary was Tk. 20,000
(2) In 2013, Asif's salary was 20% greater than it was in 2012, and in 2014, Asif's salary was 30% greater than it was in 2012. (IBA BBA '14)

Instructions: Each question consists of a problem followed by two statements. Decide whether the data in the statements are sufficient to answer the question. • (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient. • (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient. • (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient. • (D) EACH statement ALONE is sufficient. • (E) Statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data are needed.



৬. At least 100 students in a school study Spanish, 15% of the students who study French also study Spanish. Do more students study French than Spanish?

- (1) 6 students study both French and Spanish.
(2) 5% of the students who study Spanish also study French. (IBA BBA '15)

- ক Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
খ Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
গ BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
ঘ EACH statement ALONE is sufficient.
ঙ Statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data are needed.

প্রশ্ন ৬-৬: Data Sufficiency (Math)

Questions 56 to 60: Instruction: Each question is following by two statements. Decide whether the data in the statements are sufficient to answer the question. Select your answer according to whether: A. Statement (1) alone is sufficient, but statement (2) alone is not sufficient to answer the questions. B. Statement (2) alone is sufficient, but statement (1) alone is not sufficient to answer the questions. C. Both statements taken together are sufficient to answer the question, but neither statement alone is sufficient. D. Each statement alone is sufficient. E. Statement (1) and (2) together are not sufficient, and additional data is needed to answer the question.

৬. If $x + y + z > 0$, is $z > 1$?

- (1) $z > x + y + 1$
(2) $x + y + 1 < 0$ (IBA MBA '16 (1))

- ক Statement (1) alone is sufficient
খ Statement (2) alone is sufficient
গ Both statements taken together are sufficient
ঘ Each statement alone is sufficient
ঙ Statement (1) and (2) together are not sufficient

প্রশ্ন ৭-৯: Read each problem carefully. Pick the option that solves the equation.

Questions 70 to 74 Each data sufficiency problem consists of a question and two statements, labeled (1) and (2), that give data. You have to decide which statements are sufficient for answering the question. Select the appropriate answer as per the conditions.

৭. Is 98 a factor of z ?

- (1) $z > 0$
(2) z is divisible by 154. (IBA BBA '16)

- ক Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient
খ Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient
গ BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient
ঘ EACH statement ALONE is sufficient
ঙ Statements (1) and (2) TOGETHER are NOT sufficient

৮. A TV was listed at a price that would have given the store a profit of 20% of the purchase cost. What is the purchase cost of the TV?

- (1) After reducing the cost of the TV 10%, there was a loss incurred
(2) The TV was sold for Tk. 50,000 (IBA BBA '16)

- ক Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient
খ Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient
গ BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient
ঘ EACH statement ALONE is sufficient
ঙ Statements (1) and (2) TOGETHER are NOT sufficient

৯. A school is purchasing red paint and blue paint to prepare purple paint. Red paint costs Tk 4 per liter, and blue paint costs Tk 6 per liter. If 10 liters of purple paint consists of x liters of red paint and y liters of blue paint, is $x > y$?

- I) $y > 4$
II) The 10 liters of purple paint costs less than Tk 50. (IBA MBA '24)

- ক Only I
গ Both I and II
ঙ Cannot be determined
খ Only II
ঘ Either I or II

প্রশ্ন ১০-১০: Data Sufficiency (Math)

Questions 57 to 60: Instruction: Each question is following by two statements. Decide whether the data in the statements are sufficient to answer the question. Select your answer according to whether: A. Statement (1) alone is sufficient, but statement (2) alone is not sufficient to answer the questions. B. Statement (2) alone is sufficient, but statement (1) alone is not sufficient to answer the questions. C. Both statements taken together are sufficient to answer the question, but neither statement alone is sufficient. D. Each statement alone is sufficient. E. Statement (1) and (2) together are not sufficient, and additional data is needed to answer the question.



১০. x and y are both positive integers. If $x - 3$ can be divided by 5 and y can be divided by 2, what is the remainder when xy is divided by 10?

- (1) The remainder is 3 when x is divided by 3.
(2) The remainder is 2 when y is divided by 5. (IBA MBA '16 (2))

- (ক) Statement (1) alone is sufficient
(খ) Statement (2) alone is sufficient
(গ) Both statements taken together are sufficient
(ঘ) Each statement alone is sufficient
(ঙ) Statement (1) and (2) together are not sufficient

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Geometry & Mensuration

বিষয়	পৃষ্ঠা
Composite Figures & Shaded Regions: Overlapping shapes, inscribed/circumscribed figures, and calculating shaded area	৭৩
Mensuration 3D: Surface area and volume of Cubes, Cuboids, Cylinders, Cones, Spheres, and Frustums	৭৭
Coordinate Geometry: The XY-plane, distance formula, midpoint, slopes, and linear graphs	৭৯
Lines & Angles: Parallel lines, transversals, and angle properties	৮২
Triangles: Centers of a triangle, congruence, similarity, and Pythagoras applications	৮৫
Quadrilaterals & Polygons: Interior/exterior angles, Parallelograms, Rhombuses, Trapeziums	৮৯
Circles: Chords, tangents, secants, arcs, and inscribed angles	৯২

Composite Figures & Shaded Regions: Overlapping shapes, inscribed/circumscribed figures, and calculating shaded area

Composite Figures & Shaded Regions: Overlapping shapes, inscribed/circumscribed figures, and calculating shaded area — IBA past-paper practice, ordered easiest → toughest.

Practice — Composite Figures & Shaded Regions: Overlapping shapes, inscribed/circumscribed figures, and calculating shaded area

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. In the figure below there is a circle inscribed inside a square. The length of one side of the square is 7 inches; determine the approximate area of the shaded region inside the square. (figure not drawn to scale)



(IBA BBA '09)

- ক 9.3 sq inches খ 10.5 sq inches
গ 16.4 sq inches ঘ 49 sq inches
ঙ 104.8 sq inches

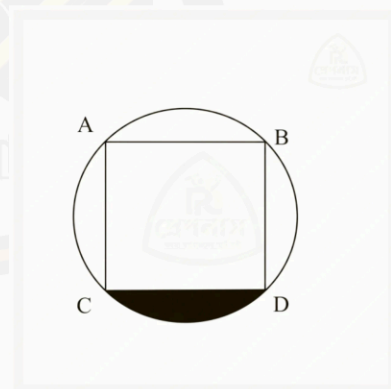
২. A small square area inside a larger square is shaded. The diagonal of the larger square is three times the diagonal of the smaller square in length. What fraction of the area of the larger square is not shaded? (IBA BBA '11)

- ক 1/9 খ 1/3
গ 2/3 ঘ 8/9
ঙ None of these

৩. A cow is tied to the corner of a square of side 15m with a rope of length 14m. Find the area the cow can graze and the area which it cannot. (IBA BBA '06)

- ক 144 m², 77 m² খ 135m², 73 m²
গ 164 m², 77 m² ঘ 154 m² 71 m²
ঙ None of these

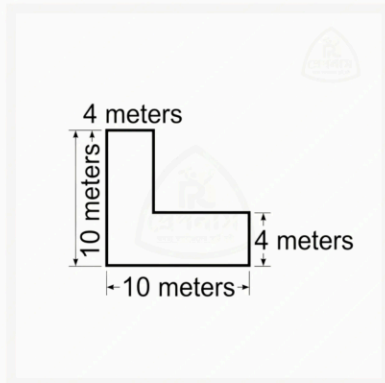
৪. In this figure inscribed square area is 16. Find out the area of shaded part?



(IBA MBA '21)



৫. The figure below shows the floor dimensions of an L-shaped room. All angles shown are right angles. If carpeting costs Taka 1200 per square meter, what will carpet cost for the entire floor of the room cost?



(IBA MBA '03)

- ☐ ক Taka 48000 ☐ খ Taka 76800
☐ গ Taka 96000 ☐ ঘ Taka 100800
☐ ঙ Taka 139200

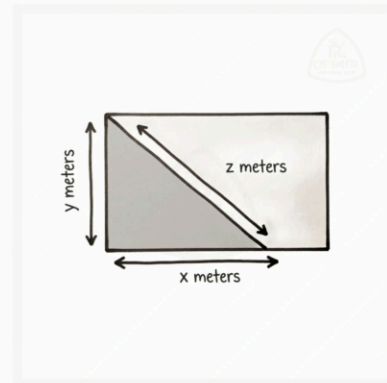
৬. If the diameter of the outer circle is 8 cm more than that of the inner circle and the area of the shaded portion is 40π what is the area of the inner circle?



(IBA BBA '02)

- ☐ ক 6π ☐ খ 9π
☐ গ $12\pi\sqrt{2}$ ☐ ঘ 16π
☐ ঙ none of these

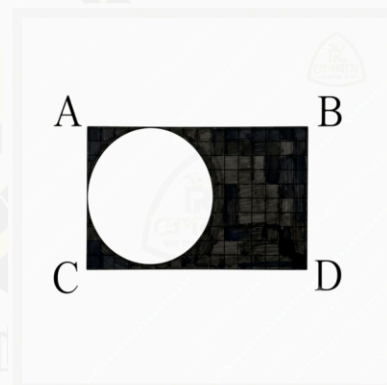
৭. The shaded portion of the rectangle represents a flower bed. If the area of the flower bed is 12 square meters and $x = y + 2$, then z equals:



(IBA BBA '11)

- ☐ ক $\sqrt{13}$ meters ☐ খ $2\sqrt{13}$ meters
☐ গ 6 meters ☐ ঘ 8 meters
☐ ঙ None of these

৮. In the rectangle ABCD, $2AB = 3BD$. If the radius of the circle is $\sqrt{7}$, find the area of the shaded region.

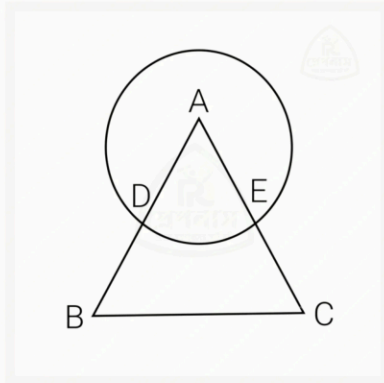


(IBA MBA '07)

- ☐ ক $42 - 7\pi$ ☐ খ $32 - 5\pi$
☐ গ $13 - 7\pi$ ☐ ঘ $56 - 7\pi$
☐ ঙ none of these



৯. In the following figure, ABC is an equilateral triangle where points D and E are the midpoints of sides AB and AC respectively. If point A is the center of the circle and BC = 42 cm what is the area of the arc ADE?

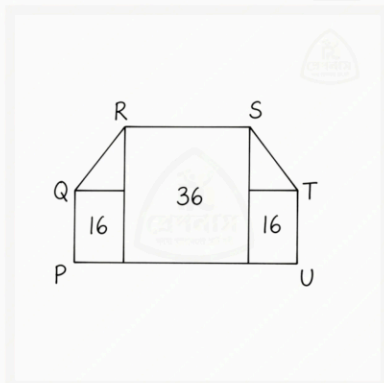


(IBA MBA '18)

- ক 462 cm²
 গ 231 cm²
 ঙ None of these

- খ 346.5 cm²
 ঘ 154 cm²

১০.



The following region PQRSTU consists of three square regions and two triangular regions. If the square regions have areas 16, 36 and 16, what is the perimeter of PQRSTU? (IBA MBA '04)

- ক $22 + 4\sqrt{5}$
 গ $28 + 4\sqrt{5}$
 ঙ $34 + 4\sqrt{5}$

- খ $28 + 2\sqrt{5}$
 ঘ $34 + 2\sqrt{5}$

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Mensuration 3D: Surface area and volume of Cubes, Cuboids, Cylinders, Cones, Spheres, and Frustums

Mensuration 3D: Surface area and volume of Cubes, Cuboids, Cylinders, Cones, Spheres, and Frustums — IBA past-paper practice, ordered easiest → toughest.

Practice — Mensuration 3D: Surface area and volume of Cubes, Cuboids, Cylinders, Cones, Spheres, and Frustums

প্রশ্ন ১-১০: Read each problem carefully. Pick the option that solves the equation.

১. Find the volume of a triangular solid cylinder with the following dimensions: 4 feet base, 3 feet height of triangle, and 10 feet height of the cylinder. (IBA BBA '06)

- ক 120cft খ 60cft
গ 80cft ঘ 65cft
ঙ None of these

২. If the area of a square with sides of length 8 centimeters is equal to the area of a rectangle with a width of 4 centimeters, what is the perimeter of the rectangle centimeters? (IBA MBA '12 (1))

- ক 16 খ 20
গ 32 ঘ 40
ঙ None of these

৩. If the radius of a cylinder is tripled while its height is halved, its volume will be (IBA MBA '04)

- ক halved
খ unchanged
গ doubled
ঘ increased by 50%
ঙ four and a half times as large

৪. A certain recipe makes enough batter (a semi-liquid mixture of one or more grains used to prepare various foods) for exactly 8 circular pancakes that are each 10 inches in diameter. How many circular pancakes, each 5 inches in diameter and of the same thickness as the 10-inch pancakes, should the recipe make? (IBA BBA '13)

- ক 4 খ 15
গ 24 ঘ 32
ঙ 40

৫. A rectangle having an area of 56 cm^2 is formed when one side of a square is decreased by 5 cm and another side of the same square is increased by 5 cm. What is the perimeter of the original square (in cm)? (IBA BBA '12)

- ক 36 খ 40
গ 44 ঘ 48
ঙ none of these

৬. One of the sides of a square measure 20 cm in length. If we increase the length of two opposite sides by 4 centimeters and decrease the length of the remaining two opposite sides by the same measure, then what will be the area of the resulting figure in sq. cm? (IBA MBA '13)

- ক 324 খ 360
গ 384 ঘ 400
ঙ None of these

৭. A rectangular field is to be fenced on three sides leaving a side of 10 feet uncovered. If the area of the field is 240 square feet, how many feet of fencing will be required? (IBA BBA '17)

- ক 48 খ 58
গ 68 ঘ 78
ঙ None of these

৮. If a rectangular block that is 4 inches by 4 inches by 10 inches is placed inside a right circular cylinder of radius 3 inches and height of 10 inches, the volume of the unoccupied portion of the cylinder is how many cubic inches? (IBA BBA '13)

- ক $6\pi - 16$ খ $9\pi - 16$
গ $160\pi - 30\pi$ ঘ $60\pi - 160$
ঙ $90\pi - 160$



৯. Wall-to-Wall carpeting is installed in a hallway at a cost of Tk 425 per square feet. If the hallway's perimeter is 44% of its area and its length is 50 feet, determine total carpeting costs in Taka. (IBA MBA '24)

- ☐ ক 182,950 ☐ খ 125,500
☐ গ 106,250 ☐ ঘ 72,165
☐ ঙ none of these

১০. The inside dimensions of rectangle wooden box are 6 inches by 8 inches by 10 inches. A cylindrical canister is to be placed inside the box so that it stands upright when the closed box rests on one of its six faces. Of all such canisters that could be used, what is the radius in inches of the one that has maximum volume? (IBA MBA '05)

- ☐ ক 3 ☐ খ 4
☐ গ 5 ☐ ঘ 6
☐ ঙ None of these

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Coordinate Geometry: The XY-plane, distance formula, midpoint, slopes, and linear graphs

Coordinate Geometry: The XY-plane, distance formula, midpoint, slopes, and linear graphs — IBA past-paper practice, ordered easiest → toughest.

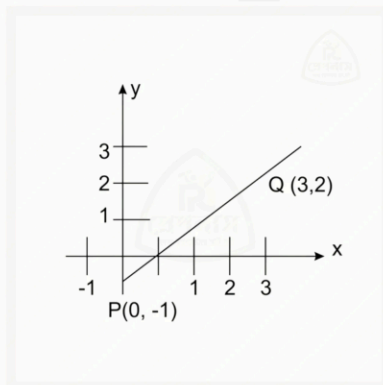
Practice — Coordinate Geometry: The XY-plane, distance formula, midpoint, slopes, and linear graphs

প্রশ্ন ১-৯: Read each problem carefully. Pick the option that solves the equation.

১. A piece of rope is lying on horizontal line. One of its ends is at coordinate -4 and the other is at coordinate 7 . What is the length of the rope? (IBA MBA '03)

- ক 3 খ 5
গ 7 ঘ 9
ঙ 11

২. In the figure below, the middle point on segment PQ is:



(IBA BBA '06)

- ক (1.5, 1.5) খ (1.5, 0.5)
গ (1.5, 1) ঘ (2, 1)
ঙ None of these

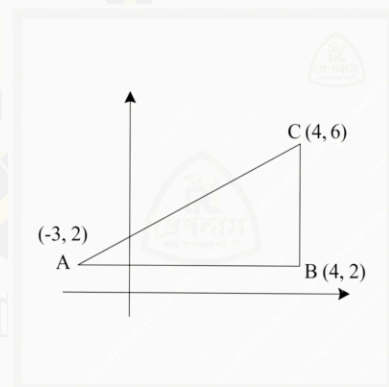
৩. Point A (1, 0) is drawn to B (5, 0) and is joined to C (3, 4). Which of the following is true? (IBA BBA '05)

- ক CA = CB খ AB = BC
গ AC = AB ঘ AC > BC
ঙ None of these

৪. The mid-point of a line joining $(-3, 5)$ to $(-3, -1)$ is : (IBA BBA '97)

- ক 1, -4 খ $-3, 2$
গ $-2, -1$ ঘ $-3, 1$
ঙ 1, -1

৫. In the figure, what is the area of the triangle ABC?

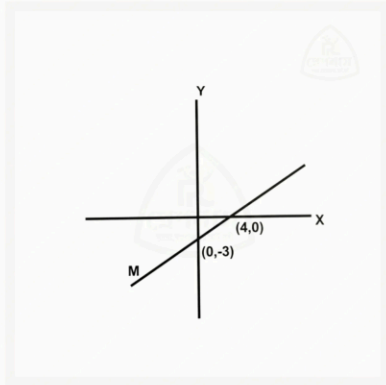


(IBA BBA '08)

- ক 14 খ 16
গ 24 ঘ 28
ঙ none of these



৬.



The graph of which of the following equations is a straight line that is parallel to the line M in the figure below and intersects the positive direction of Y-axis?

(IBA MBA '24)

- ☐ ক $4y + 3x = 2$ ☐ খ $4y - 3x = -2$
☐ গ $4y - 3x = 4$ ☐ ঘ $4y - 3x = -4$
☐ ঙ none of these

৭. When the lines $y = 3x$, $y = -3x + 12$, and $y = 0$ intersect in the coordinate plane, they enclose a triangular region. What is the area of this triangle? (IBA MBA '25)

- ☐ ক 8 ☐ খ 10
☐ গ 12 ☐ ঘ 16
☐ ঙ Cannot be determined

৮. City B is 5 miles east of City A. City C is 10 miles southeast of City B. Which of the following is the closest distance from City A to City C? (IBA MBA '03)

- ☐ ক 15 miles ☐ খ 12 miles
☐ গ 13 miles ☐ ঘ 14 miles
☐ ঙ None of these

৯. Two survey posts, A and B, are located at coordinates $(4, -5)$ and $(-8, 7)$ on a mapping grid. A separate equilateral triangle LMN is constructed so that its height is exactly equal to the distance between posts A and B. What is the area of triangle LMN? (IBA MBA '25)

- ☐ ক 288 ☐ খ $288\sqrt{3}$
☐ গ $432\frac{\sqrt{3}}{4}$ ☐ ঘ $96\sqrt{3}$
☐ ঙ $576\frac{\sqrt{3}}{4}$

উত্তরমালা

১. ঙ	২. খ	৩. ক	৪. খ	৫. ক	৬. গ	৭. গ	৮. ঘ
৯. ঘ							



এই অধ্যায় অ্যাপে

সমাধান, ব্যাখ্যা ও অতিরিক্ত প্রশ্ন অ্যাপে - Solutions, explanations & extra questions — in the app



Lines & Angles: Parallel lines, transversals, and angle properties

Lines & Angles: Parallel lines, transversals, and angle properties — IBA past-paper practice, ordered easiest → toughest.

Practice — Lines & Angles: Parallel lines, transversals, and angle properties

১. B and C are points on a straight line AD, where $AB = BC = CD$. What percent of AC is AD? (IBA MBA '02)

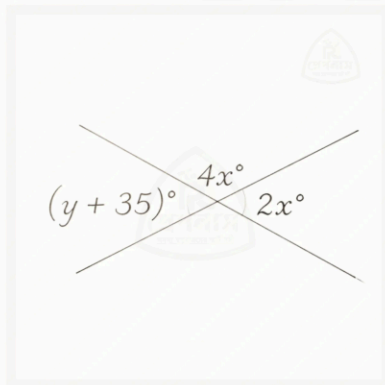
- ক 1.5% খ 50%
 গ 66.67% ঘ 133.33%
 ঙ 150%

প্রশ্ন ২-১০: Read each problem carefully. Pick the option that solves the equation.

২. The size of the smaller angle between the hands of the clock at half past six, expressed in degrees, is: (IBA MBA '00)

- ক 7.5°
 খ 15°
 গ 22.5°
 ঘ 30°
 ঙ more than $22\frac{1}{2}^\circ$ but less than 30°

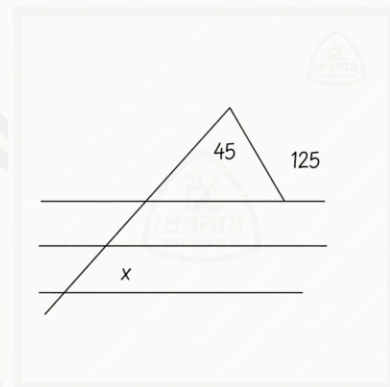
৩. In the figure, what is the value of y ?



(IBA MBA '16 (1))

- ক 20 খ 25
 গ 30 ঘ 35
 ঙ None of these

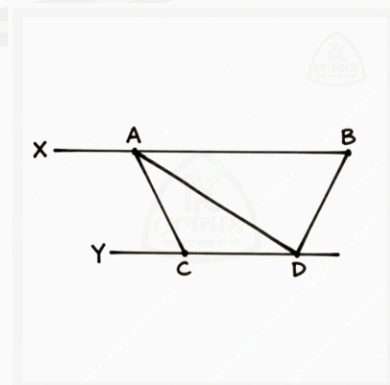
৪. In the following diagram, all the angles are expressed in degrees. What is the value of x ?



(IBA BBA '96)

- ক 55 খ 45
 গ 80 ঘ 100
 ঙ 125

৫. In the diagram, XB is parallel to YD , $AC = CD$, $\angle XAC = 130^\circ$ and $\angle ADB = 90^\circ$. Calculate $\angle ABD$.

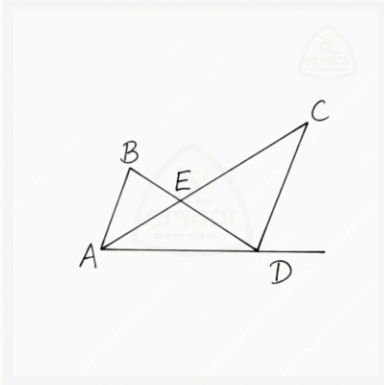


(IBA BBA '12)

- ক 55° খ 60°
 গ 65° ঘ 70°
 ঙ none of these



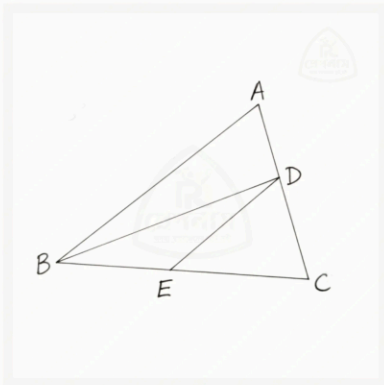
৬. In the diagram, AB is parallel to DC. If $AE=ED$, $\angle EAB = 34^\circ$ & $\angle EAD = 42^\circ$, $\angle CDE = ?$



(IBA MBA '07)

- ক 55° খ 60°
 গ 64° ঘ 72°
 ঙ None of these

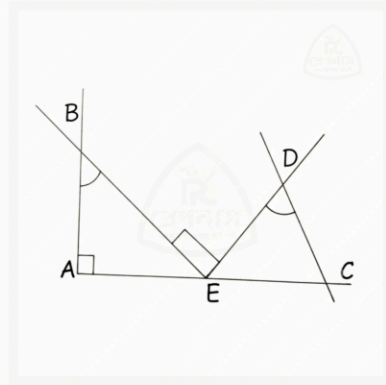
৭. In the figure, DE is parallel to AB. $\angle BAC=50^\circ$, $\angle BDE=25^\circ$ and $\angle DBE=35^\circ$. Calculate $\angle DCE$.



(IBA BBA '03)

- ক 45° খ 55°
 গ 60° ঘ 70°
 ঙ none of these

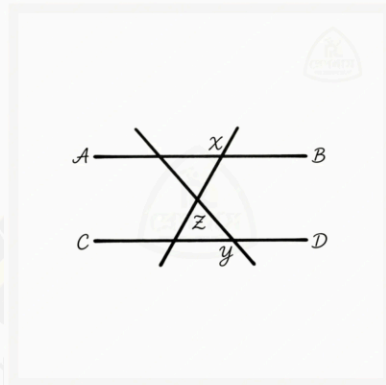
৮. $\angle ABE = 25^\circ$ and $\angle EDC = 100^\circ$. What is the value of $\angle DCE$?



(IBA BBA '02)

- ক 25° খ 30°
 গ 45° ঘ 65°
 ঙ none of these

৯. In the figure, AB is parallel to CD. $\angle x$ is 130° and $\angle y$ is 150° . What is the value of $\angle z$?

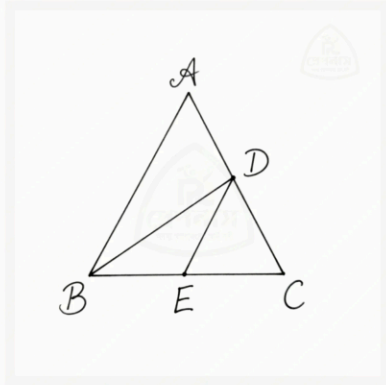


(IBA BBA '97)

- ক 110 খ 100
 গ 90 ঘ 60
 ঙ none of these



১০. In the figure $AB = AC$, AB is parallel to DE . BD bisects $\angle ABC$. $\angle BDE = 25^\circ$. Calculate $\angle BAC$.



(IBA MBA '11 (2))

- ক 65° খ 70°
গ 75° ঘ 80°
ঙ None of these

উত্তরমালা

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৯. খ	১০. ঘ						

6 more questions available in the PrepNus app.



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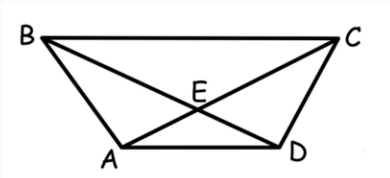
Triangles: Centers of a triangle, congruence, similarity, and Pythagoras applications

Triangles: Centers of a triangle, congruence, similarity, and Pythagoras applications — IBA past-paper practice, ordered easiest → toughest.

Practice — Triangles: Centers of a triangle, congruence, similarity, and Pythagoras applications

ପ୍ରଶ୍ନ ୧-୧୦: Read each problem carefully. Pick the option that solves the equation.

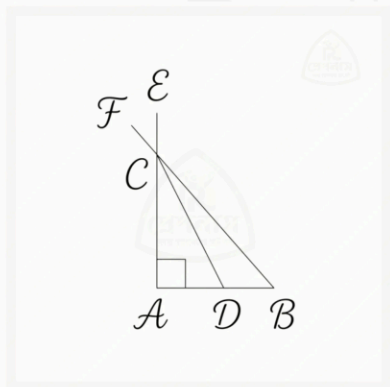
୧. In the figure, AD is parallel to BC. BC = 12 cm and AD = 3 cm. If AE = 2 cm, what is the length of EC in cm?



(IBA BBA '14)

- ☐ କ 6
☐ ଗ 9
☐ ଙ none of these
☐ ଘ 8
☐ ଘ 12

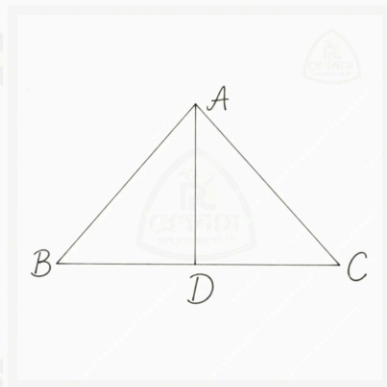
୨. In the figure $\angle ABC = 24^\circ$, and $\angle FCE = \angle BCD$. Find $\angle ECF$.



(IBA MBA '17 (2))

- ☐ କ 33°
☐ ଗ 44°
☐ ଙ None of these
☐ ଘ 35°
☐ ଘ 52°

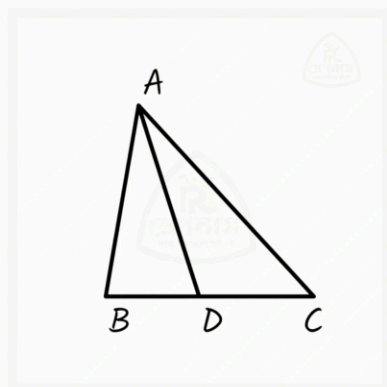
୩. $\angle BCA = 30^\circ$ $\angle BCA = 110^\circ$ and $AD = BD$. What is the value of $\angle DAC$?



(IBA BBA '02)

- ☐ କ 75°
☐ ଗ 70°
☐ ଙ none of these
☐ ଘ 85°
☐ ଘ 80°

୪. In the figure below. AB is perpendicular to BC and $DB = DC$. If $AD = \sqrt{10}$ and $AC = 4$ cm, what is the value of BC?

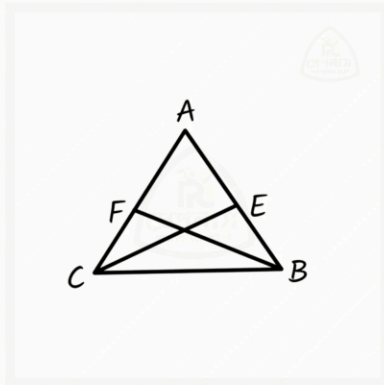


(IBA BBA '00)

- ☐ କ $2\sqrt{2}$
☐ ଗ $3\sqrt{2}$
☐ ଙ none of these
☐ ଘ 3
☐ ଘ 4



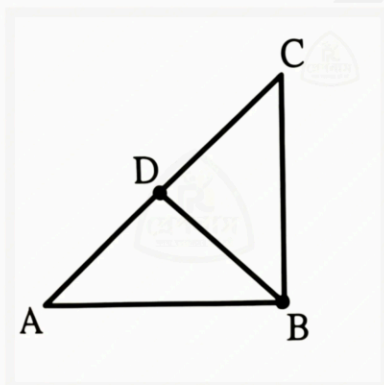
৯. In triangle ABC, angle AFB = angle AEC = 90° . If BF = CE, which of the following must be true? ৯.



(IBA BBA '99)

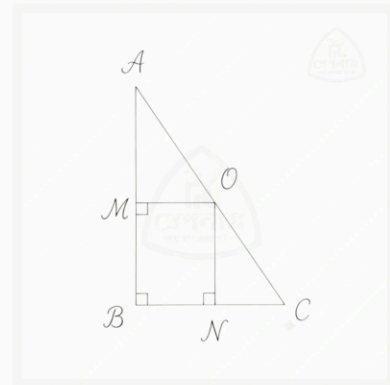
- ☐ ক AB = AC
☐ গ BF = AF
☐ ঙ none of these
☐ খ AE = CE
☐ ঘ AB = BC

১০. In the triangle, $AC = AB$, $BC = BD = AD$. Find the value of $\angle DBA$.



(IBA MBA '13)

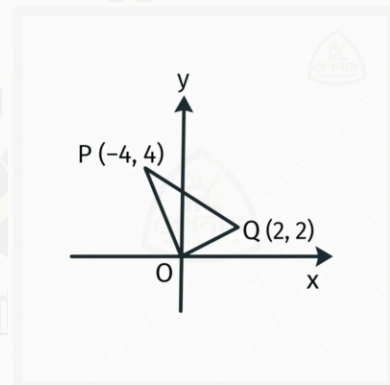
- ☐ ক 32°
☐ গ 37.5°
☐ ঙ None of these
☐ খ 36°
☐ ঘ 39°



In the right angled triangle ABC, O is point on hypotenuse AC, where $OM = ON$; ON is perpendicular to BC and OM is perpendicular to AB, $AB = 10$ cm and $BC = 8$ cm. Find the length of OM in cm. (IBA MBA '12 (2))

- ☐ ক $\frac{24}{7}$
☐ গ $\frac{40}{9}$
☐ ঙ None of these
☐ খ $\frac{54}{7}$
☐ ঘ $\frac{32}{9}$

১১. In the figure, the angle POQ is 90 degrees. What is the perimeter of the triangle OPQ?

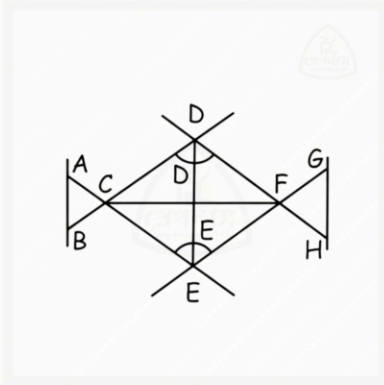


(IBA MBA '04)

- ☐ ক $4\sqrt{2}$
☐ খ $8\sqrt{2}$
☐ গ $6 + 2\sqrt{5}$
☐ ঘ 6
☐ ঙ $6\sqrt{2} + 2\sqrt{10}$



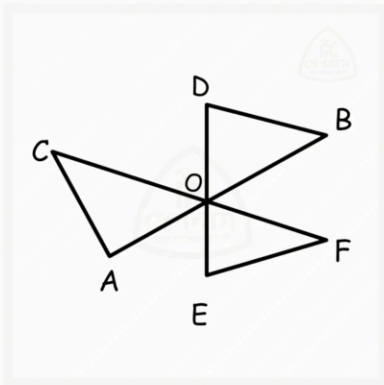
৯. ABC is an equilateral triangle. If $\angle FGH = 50^\circ$, $FG = FH$, $BD = AE$ and $DH = EG$, what is the value of $\angle CDF$?



(IBA MBA '02)

- ☐ ক 80° ☐ খ 90°
☐ গ 100° ☐ ঘ 110°
☐ ঙ None of these

১০. In the figure below $OF = EF$, $OD = OB$ and $OC = OA$. If $\angle ACO = 60^\circ$ and $\angle OEF = 30^\circ$, what is the value of $\angle DBO$?



(IBA BBA '00)

- ☐ ক 60° ☐ খ 55°
☐ গ 50° ☐ ঘ 45°
☐ ঙ none of these

উত্তরমালা

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৯. ক	১০. ক						

75 more questions available in the PrepNus app.



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Quadrilaterals & Polygons: Interior/ exterior angles, Parallelograms, Rhombuses, Trapeziums

Quadrilaterals & Polygons: Interior/exterior angles, Parallelograms, Rhombuses, Trapeziums — IBA past-paper practice, ordered easiest → toughest.

Practice — Quadrilaterals & Polygons: Interior/exterior angles, Parallelograms, Rhombuses, Trapeziums

প্রশ্ন ১-১: Read each problem carefully. Pick the option that solves the equation.

১. If three angles of a quadrilateral are x , y and z , express the fourth angle in terms of x , y and z . (IBA BBA '96)

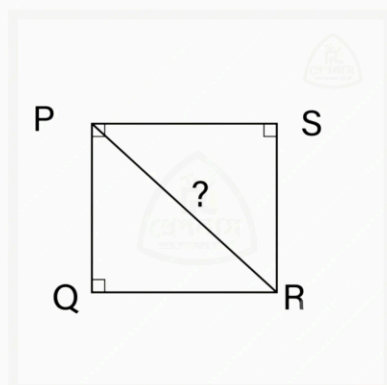
- ক) $360-(x-y-z)$ খ) $360-x-y-z$
 গ) $180-(x-y-z)$ ঘ) $180-x-y-z$
 ঙ) none of these

২. A square floor with side of 5 meter is to be covered with square tiles. If each tile has a perimeter of 0.8 meter, what is the minimum number of tiles needed to cover the floor? (IBA MBA '02)

- ক) 144 খ) 425
 গ) 500 ঘ) 625
 ঙ) None of these

প্রশ্ন ৩-৩: Read each problem carefully. Pick the option that solves the equation.

৩. If a square region PQRS has an area of 2 square feet, what is the length of its diagonal (PR)?



(IBA BBA '06)

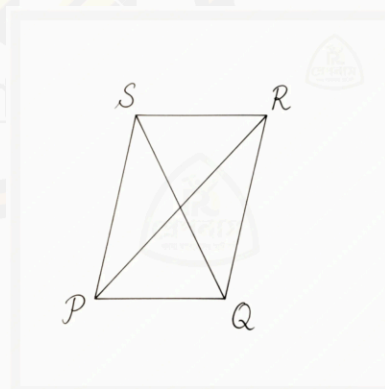
- ক) 4 feet খ) 2 feet
 গ) 8 feet ঘ) $2\sqrt{2}$ feet
 ঙ) None of these

৪. The area of a square plot is twice that of another square plot. If the diagonal of the bigger plot is x , what is the diagonal of the smaller plot? (IBA MBA '01)

- ক) $\frac{x}{2}$ খ) $\frac{x}{4}$
 গ) $\frac{2x}{3}$ ঘ) $\frac{\sqrt{2}x}{2}$
 ঙ) None of these

প্রশ্ন ৫-১০: Read each problem carefully. Pick the option that solves the equation.

৫. In the figure below PQRS is a rhombus with each side 5cm. What is the length (in cm) of diagonal PR if $SQ = 8$ cm?

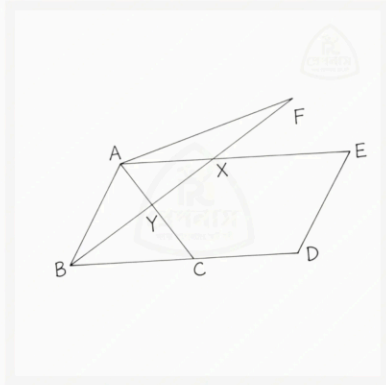


(IBA MBA '12 (2))

- ক) 6 খ) 5
 গ) 4 ঘ) 2
 ঙ) None of these



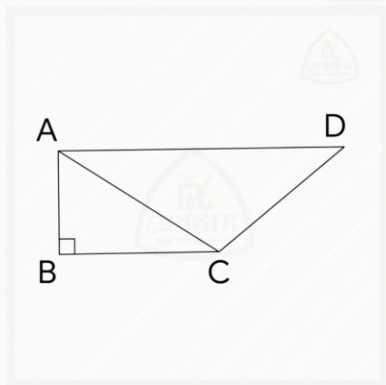
৬. ABDE is a parallelogram. $AB = AC$, $AX = FX$ and $\angle ABC = 50^\circ$. $\angle AYX = 90^\circ$. What is the value of $\angle AFX$?



(IBA BBA '02)

- ক 15 খ 20
গ 25 ঘ 30
ঙ none of these

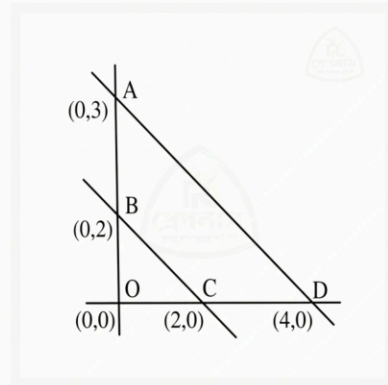
৭. In the figure, $AC = 4\sqrt{2}$, $AB = BC$, and $AD = 2BC$, What is the area of ABCD in cm^2 ?



(IBA BBA '07)

- ক 12 খ 18
গ 24 ঘ 36
ঙ cannot be determined

৮. Find the area of ABCD in square units.



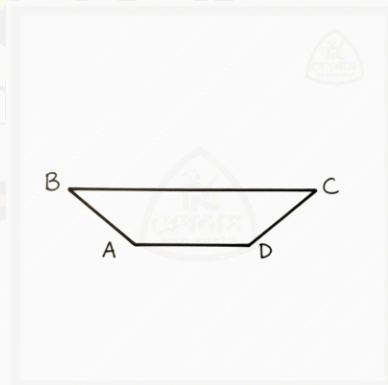
(IBA MBA '07)

- ক 2 খ 3.5
গ 4 ঘ 6
ঙ None of these

৯. If the area of a rectangular is equal to the area of a square, then the perimeter of the rectangular must be (IBA MBA '04)

- ক $\frac{1}{2}$ the perimeter of the square
খ equal to the perimeter of the square
গ equal to twice the perimeter of the square
ঘ equal to the square root of the perimeter of the square
ঙ None of the average

১০. In the figure, $AD \parallel BC$, $AB = 5$ cm and $AD = 7$ cm. If $\angle BCD = \frac{1}{2} \angle BAD$, what is the length of BC in cm?



(IBA BBA '99)

- ক 10 খ 12
গ 17 ঘ 19
ঙ can't be determined

উত্তরমালা

১. খ	২. ঘ	৩. খ	৪. ঘ	৫. ক	৬. ক	৭. গ	৮. গ
৯. ঙ	১০. খ						

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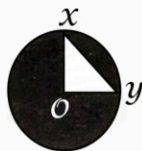
Circles: Chords, tangents, secants, arcs, and inscribed angles

Circles: Chords, tangents, secants, arcs, and inscribed angles — IBA past-paper practice, ordered easiest → toughest.

Practice — Circles: Chords, tangents, secants, arcs, and inscribed angles

ପ୍ରଶ୍ନ ୧-୧୦: Read each problem carefully. Pick the option that solves the equation.

୧. O is the center of the circle at the right. XO is perpendicular to YO and the area of triangle XOY is 32. What is the area of circle O?

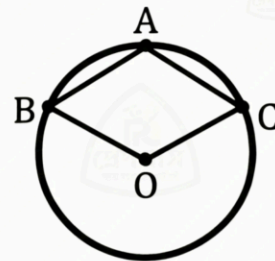


(IBA MBA '00)

- କ 16π
- ଗ 64π
- ଙ 256π

- ଧ 32π
- ଝ 128π

୨. O is the centre of the circle. If $\angle ABO = 55^\circ$ and $\angle ACO = 65^\circ$, find the value of $\angle BAC$.



(IBA MBA '12 (1))

- କ 110°
- ଗ 130°
- ଙ Cannot be determined

- ଧ 120°
- ଝ 145°

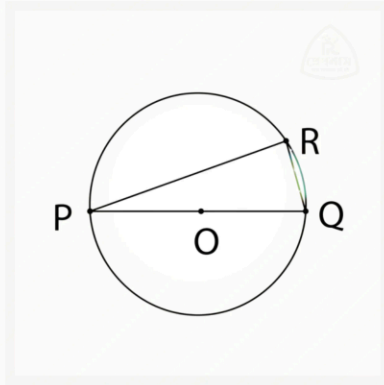
୩. A circular region has circumference c inches and area k square inches. If $c = 3k$, what is the radius of the circle in inches? (IBA MBA '03)

- କ $\frac{\sqrt{2}}{3}$
- ଗ $\frac{2}{3}$
- ଙ None of these

- ଧ $\sqrt{\frac{2}{3}}$
- ଝ $\frac{4\pi}{9}$



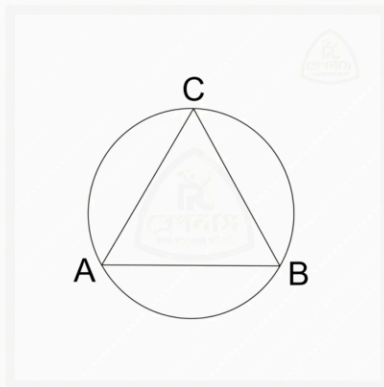
8. In the figure above O is the center of the circle and PQ is the diameter and angle P = 30 degrees. If the length of PR is 12 cm, what is the area of the circle?



(IBA BBA '19)

- ☐ ক 144π ☐ খ 48π
☐ গ 288π ☐ ঘ 216π
☐ ঙ 96π

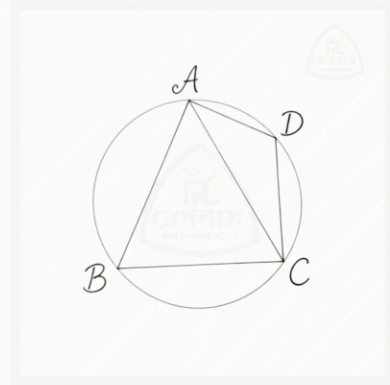
৯. ABC is an equilateral triangle, inscribed in a circle. If AB = 6 cm, find the area of the circle in cm^2 .



(IBA BBA '08)

- ☐ ক 36π ☐ খ 12π
☐ গ $12\frac{\pi}{\sqrt{3}}$ ☐ ঘ $12\sqrt{3}\pi$
☐ ঙ none of these

১০. ABCD is rectangle inscribed in a circle. Given that $AB = AC$ and $\angle BAC = 50^\circ$, find $\angle ADC$.



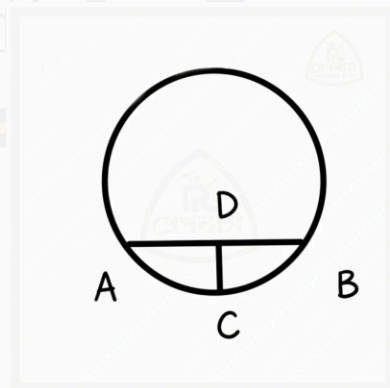
(IBA MBA '11 (2))

- ☐ ক 100° ☐ খ 110°
☐ গ 115° ☐ ঘ 120°
☐ ঙ None of these

১১. Let P and Q be points which are two inches apart and let A be the area, in square inches, of a circle which passed through P and Q. Which of the following is the set of all possible values for A? (IBA MBA '11 (1))

- ☐ ক $0 < A$
☐ খ $0 < A \leq \pi$
☐ গ $A = \pi$
☐ ঘ $A > \pi$
☐ ঙ $A \geq \pi$

১২. The diameter of the circle is 10cm and $DC = 2$ cm. If $\angle ADC = 90^\circ$ and $AD = DB$, what is the length of AB?

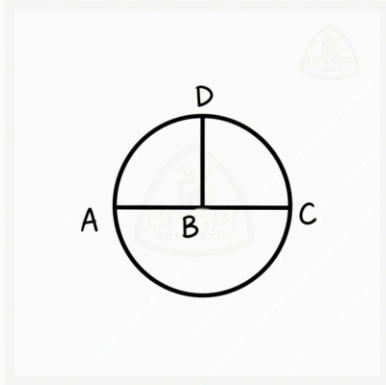


(IBA BBA '00)

- ☐ ক 6 ☐ খ 8
☐ গ 9 ☐ ঘ 12
☐ ঙ none of these



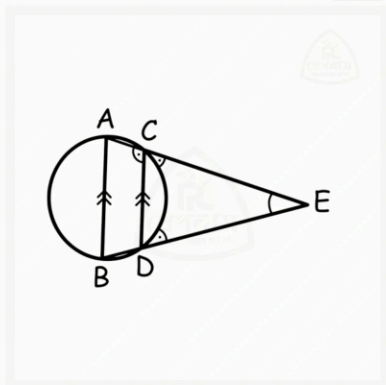
৯. In the circle AC is diameter. DB is perpendicular to AC. If $AB : BC = 3 : 1$ & $BC = 2\text{cm}$, find the length of BD in cm.



(IBA BBA '98)

- ক 2.5 খ 3
 গ $3\sqrt{2}$ ঘ $2\sqrt{3}$
 ঙ None of these

১০. In the figure, AB, the diameter of the circle, is parallel to CD. If $\angle AEB = 40^\circ$, $\angle ACD = ?$



(IBA BBA '98)

- ক 100 খ 105
 গ 115 ঘ 120
 ঙ None of these

উত্তরমালা

১. গ	২. খ	৩. গ	৪. খ	৫. খ	৬. গ	৭. ঙ	৮. খ
৯. ঘ	১০. ঙ						

19 more questions available in the PrepNus app.



এই অধ্যায় অ্যাপে

সমাধান, ব্যাখ্যা ও অতিরিক্ত প্রশ্ন অ্যাপে - Solutions, explanations & extra questions — in the app

