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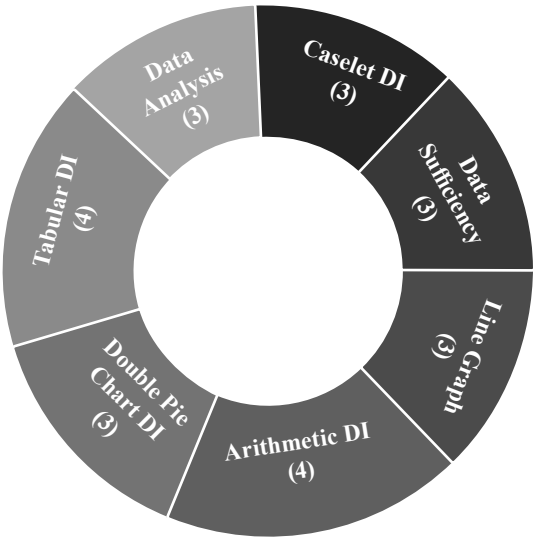

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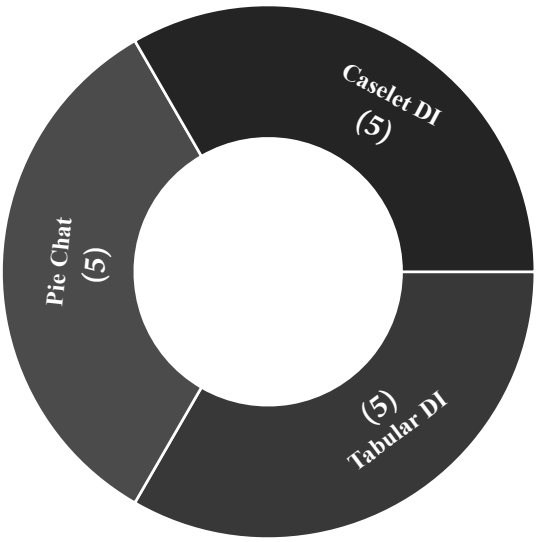

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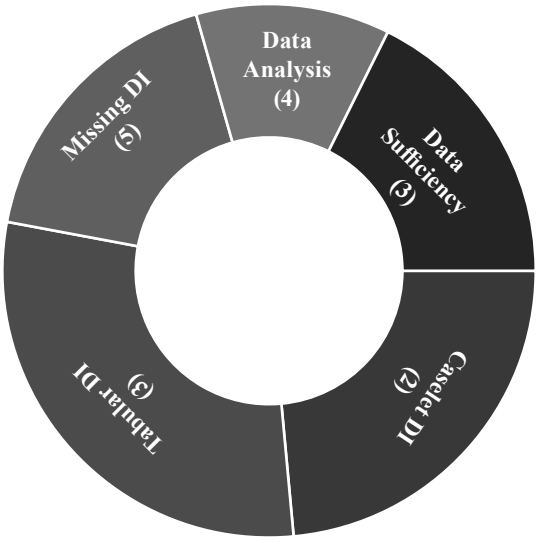

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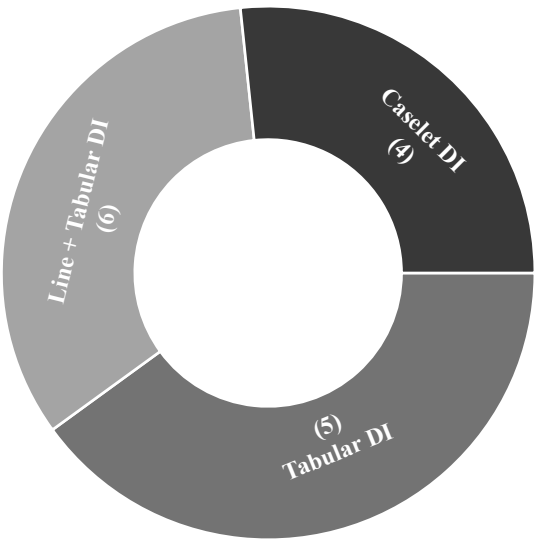

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Chapter

12

Data Analysis

Direction (1-10): Study the following information carefully and answer the question.

Exp. 1: In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Two trains A and B are running in the same direction and they cross a 75 m long platform in 25 seconds and 15 seconds respectively. Speed of train B is 25.2 km/h more than that of train A and the length of train A is 45 m more than that of train B.

Quantity I: If both the trains were running in opposite directions, then in what time would they cross each other?

Quantity II: If the speed of train B were 3 m/s more than its original speed, then at what time would train B cross a 95 m long tunnel?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

Exp. 2: In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

A bag contains 'x' black balls and 7 white balls and probability of taking out 2 black balls is $\frac{1}{15}$.

Quantity I: Find the probability of taking out 2 white balls from the bag?

Quantity II: If there were also 5 red balls in the bag, then what would be the probability of taking out 1 red ball from the bag?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

Exp. 3: In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: Train A can cross train B while running in the same direction in 86 seconds. The length of train B is 240 m and the speed of train A is 18 km/h more than that of train B. If train A can cross a 170 m long platform in 15 seconds, then in what time train B can cross a 140 m long tunnel?

Quantity II: Average of present ages of A, B and C is 25 years. If A's age is neither more than 24 years nor less than 21 and B is 6 years older than A, then what can be C's present age?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

Exp. 4: In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: Two two-digit numbers A and B are in the ratio of 3 : 8 respectively and the average of numbers A, B and C is 48. When the digits of A are reversed, it becomes equal to B. Find that A is what percent of C?

Quantity II: Find the value of 'a' in $a2 - 92a + 960 = 0$.

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

Exp. 5: In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: A number is given below that follows a certain pattern and contains a wrong term. The number that will replace the wrong term in the series is P. Find the prime factors of P.

18, 30, 44, 62, 90, 130

Quantity II: LCM and HCF of two numbers 'a' and 'b' ($a > b$) is 9 and 135 respectively. Find the value of 'b'.

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

Exp. 6: In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

A man invested ₹40000 in a scheme, which gives compound interest at P% rate for the 1st year and at Q% rate for the 2nd year.

Two equations (A) and (B) are given below:

A: P2 + Q2 = 388

B: Q – P = 10

Quantity I: Find the total interest received by the man from the scheme after 2 years?

Quantity II: Find the total compound interest received on ₹42000 at (Q – 6)% rate after 2 years?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

Exp. 7: In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

A quadratic equation is given below:

$x2 - 3x - 180 = 0$

Quantity I: Find the value of 'x' in the given equation?

Quantity II: If time taken by A alone to complete a work is (greater value of 'x' + 15) hours and time taken by B alone to complete the work is (smaller value of 'x' + 30) hours, then in what time A and B together can complete the work?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

Exp. 8: In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: In a mixture of milk and water, the quantity of milk is 40 L more than that of water and total worth of the mixture is ₹2400. If the cost of pure milk were ₹12 per L less than its original cost, then the total worth of the mixture would be ₹1800. What is the original cost of the mixture?

Quantity II: Find the value of 'p' in $p2 - 75p + 1400 = 0$

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

Exp. 9: In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: If one root of equation $10x2 + px + q = 0$ is $\frac{7}{2}$, find the value of $|7p + 2q|$.

Quantity II: A boat can travel 'D' km downstream in 5 hours and '2D – 335' km upstream in 5 hours. If the speed of the stream is 9 km/h, then find the value of 'D'.

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

Exp. 10: In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: Find the value of P, if the difference between simple interest and compound interest on a sum of ₹46875 after 3 years is ₹228.

Quantity II: Find the mode of observations $(2x + 1)$, 7, 5, 17, –11, 23, $(x - 5)$, 5, 5, 21 if their mean is 5.

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

Solutions (01-10):

1. (*a*): Let the speed of train A = 'x' km/h

So, the speed of train B = $(x + 25.2)$ km/h

Let the length of train B = 'd' m

So, the length of train A = $(d + 45)$ m

Now, $\frac{(d+45+75)\times 18}{x\times 5} = 25$

$5x = \frac{(d+120)\times 18}{25}$ ...(1)

And, $\frac{(d+75)\times 18}{(x+25.2)\times 5} = 15$

$(d + 75) \times 18 = (5x + 126) \times 15$ ...(2)

From equations (1) and (2):

$(d + 75) \times 18 = \left[\frac{(d+120)\times 18}{25} + 126\right] \times 15$

$d + 75 = \left[\frac{d+120+175}{25}\right] \times 15$

$5d + 375 = 3d + 885$

$d = 255$

From equation (1):

$x = 54$

Speed of train A = 54 km/h = 15 m/s

Speed of train B = (54 + 25.2) = 79.2 km/h = 22 m/s

Length of train A = (255 + 45) = 300 m

Length of train B = 255 m

Quantity I:

Time taken by trains A and B to cross each other while running in opposite directions:

$\frac{300+255}{15+22}$ = 15 seconds

Quantity II:

Original speed of train B = 22 m/s

So, new speed of train B = 22 + 3 = 25 m/s

Required time = $\frac{255+95}{25}$ = 14 seconds

Hence, Quantity I > Quantity II

2. (*a*): $\frac{C_2^x}{C_2^{x+7}} = \frac{1}{15}$

$\frac{x\times(x-1)}{(x+7)\times(x+6)} = \frac{1}{15}$

$15x^2 - 15x = x^2 + 13x + 42$

$14x^2 - 28x - 42 = 0$

$14x^2 - 42x + 14x - 42 = 0$

$14x(x - 3) + 14(x - 3) = 0$

$x = 3$

Quantity I:

Number of black balls in the bag = 3

Number of white balls in the bag = 7

So, probability of taking out 2 white balls from the bag:

$\frac{C_2^7}{C_2^{10}} = \frac{7}{15}$

Quantity II:

Number of black balls in the bag = 3

Number of white balls in the bag = 7

EXERCISE

LEVEL 1

1. In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: Below given is a number series that follows a certain pattern and contains two terms which are missing. Find the difference between both the missing terms of the series.

18, ?, 34, ?, 98, 183, 354, 695

Quantity II: Find the value of 'A' in $11x2 - Ax - 6 = 0$ if difference between roots of the equation is $\frac{35}{11}$.

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

2. In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: A and B together can complete a work in 9 hours and B and C together can complete the same work in 8 hours. If the ratio of B's efficiency to C's efficiency is 2 : 1, then in what time A alone can complete the work?

Quantity II: A shopkeeper marked up an article by 80% and sold it by giving two successive discounts of 5% and 20% respectively. Find the profit percent received on the article?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

3. In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: If the ratio of simple interest to compound interest received on ₹'P' at 5% rate after 2 years is $x : y$, then find the simplified value of 'x'?

Quantity II: Find the difference (in ₹) between compound interest and simple interest received on ₹25000 at R% rate after 2 years?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

4. In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Bike B is running 117 m ahead of bike A and the speed of bike A is 3 m/s more than that of bike B?

Quantity I: Find the time taken by bike A to cross bike B?

Quantity II: Find the distance covered by bike A till it crosses bike B?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

5. In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

A boat can cover 270 m downstream in 18 seconds and 216 m upstream in 24 seconds.

Quantity I: Find that the speed of the boat in still water is what percent more than that of the stream?

Quantity II: If speed of the boat in still water were $16\frac{2}{3}\%$ more than its original speed in still water, then find what would be the downstream distance covered by the boat in 15 seconds?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

6. In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: If ratio of compound interest to simple interest on a certain sum at R% rate after 2 years is 53 : 50, then find that the interest received on ₹1500 at (R + 6)% rate after 1 year will be what percent (numerical value) of that received on ₹2000 at (R + 3)% rate after 1 year?

Quantity II: Speeds of trains A and B are 18 m/s and 24 m/s respectively. Train A crosses a 200 m long platform in $(t + 5)$ seconds and train B crosses a 160 m long platform in $(t - 5)$ seconds. If the ratio of length of train A to that of train B is 5: 4, then at what time (seconds) train B will cross train A while running in the same direction?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

7. In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: Two numbers A and B are in the ratio of 1 : 2, another two numbers C and D are in the ratio of 2 : 3 and difference between B and D is equal to C. If D is greater than B and average of A and C is 17.5, then find the average of A, B, C and D?

Quantity II: Ratio of milk to water in mixture A and mixture B is 4 : 1 and 2 : 1 respectively and quantity of mixture A is 10 L more than that of mixture B. When both the mixtures are mixed together, cost of the new mixtures becomes ₹27 per L. If cost of pure milk ₹36 per L, then find the difference between milk and water in the new mixture (in L)?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

8. In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

A quadratic equation is given below:

$x2 - 43x + 420 = 0$

50. In the following question, two quantities I and II are given. Compare quantity I and quantity II on its basis. (Only quantity is to be considered)

Quantity I: A man incurred a loss of 60% on selling an item for Rs. 2800. To gain 30% on that item what should be the selling price?

Quantity II: A and B started a business by investing Rs. 4200 and Rs. 3600 respectively. After 8 months A withdraws his capital. If, at the end of 1 years, the profit share of A is Rs.6300, find the profit share of B?

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or relation can't be established

51. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

There are 3 types of tea A, B, and C of different costs. When A and B are mixed in the same quantity, the cost of the resultant becomes ₹48 per kg. When A and C are mixed in the same quantity, the cost of the resultant becomes ₹39 per kg. When B and C are mixed in the same quantity, the cost of the resultant becomes ₹45 per kg.

Quantity I: Cost per kg of type C tea.

Quantity II: Cost per kg of type A tea.

Quantity III: Cost per kg of mixtures when type A, B, and C are mixed in the same quantity.

(*a*) Quantity I > Quantity II > Quantity III

(*b*) Quantity II > Quantity III > Quantity I

(*c*) Quantity III = Quantity II > Quantity I

(*d*) Quantity I > Quantity III > Quantity II

(*e*) Quantity III > Quantity II > Quantity I

LEVEL 2

52. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

Quantity I: What will come in place of question mark in the simplification given below?

$282 \div 47 \times \sqrt{324} - 236 \div 59 \times \sqrt{?} = \sqrt{1600}$

Quantity II: Average of numbers A, B and C is 23 and average of numbers B, C and D is 37. If the average of numbers A and D is 42, then find that D is what percent of A?

Quantity III: What will come in place of question mark in the approximation given below?

$\frac{629.98}{54.96} \times \frac{220.03}{65.04} \times \frac{324.95}{41.98} = ?$

(*a*) Quantity I = Quantity II > Quantity III

(*b*) Quantity I < Quantity II = Quantity III

(*c*) Quantity I < Quantity II < Quantity III

(*d*) Quantity I > Quantity II > Quantity III

(*e*) Quantity I = Quantity II = Quantity III

53. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

Two equations (*a*) and (*b*) are given below:

(*a*) $3x - 4y = 2$

(*b*) $x - 2y = 8$

Quantity I: Find the value of '*x*' by solving both the equations?

Quantity II: Find the value of '*y*' by solving both the equations?

Quantity III: An article is marked up by ₹250 and sold by giving a discount of ₹200 on marked price. If the marked up percent is P%, discount given is Q% and marked price of the article is ₹1000, then find the value of (Q – P)?

(*a*) Quantity I > Quantity III > Quantity II

(*b*) Quantity II > Quantity III > Quantity I

(*c*) Quantity III < Quantity II < Quantity I

(*d*) Quantity II < Quantity I < Quantity III

(*e*) Quantity I = Quantity II < Quantity III

54. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

Two inlet pipes A and B and two outlet pipes C and D can fill/ empty a tank completely in 40 min, 30 min, 2 hours, and 1 hour respectively.

Quantity I: Time taken by pipes A and C together to fill the tank.

Quantity II: Time taken by pipes A and D together to fill another tank is 2 hours, then time taken by pipe D alone to fill the tank.

Quantity III: Time taken by pipes B and D together to fill the tank.

(*a*) Quantity I > Quantity II = Quantity III

(*b*) Quantity I = Quantity II = Quantity III

(*c*) Quantity I > Quantity II > Quantity III

(*d*) Quantity I = Quantity II < Quantity III

(*e*) Quantity I < Quantity II = Quantity III

55. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

A sum of ₹4000 is invested in a scheme that offers 20% rate of interest for '*t*' years. Nature of interest is not known, it can be either simple or compound. Find the value of '*t*'

Quantity I: Interest amount received is ₹1200 when nature of interest is simple.

Quantity II: Interest amount received is ₹1760 when nature of interest is annually compounded.

Quantity III: Interest amount received is 1324 when nature of interest is half yearly compounded.

(*a*) Quantity II = Quantity I < Quantity III

(*b*) Quantity III = Quantity II < Quantity I

(*c*) Quantity I = Quantity II < Quantity III

(*d*) Quantity I = Quantity III < Quantity II

(*e*) Quantity II = Quantity III < Quantity I

56. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

In an exam, a student attempted total 50 questions out of which some are correct and remaining are incorrect. For each correct question, 4 marks are awarded and '*x*' marks are deducted for every incorrect answer. Find the correct answers marked by the student.

Quantity I: Total marks obtained is 125 when $x = 1$.

Quantity II: Total marks obtained is 116 when $x = 2$.

Quantity III: Total marks obtained is 145 when $x = 1.5$.

(*a*) Quantity I < Quantity II < Quantity III

(*b*) Quantity II < Quantity III < Quantity I

(*c*) Quantity III < Quantity I < Quantity II

(*d*) Quantity I = Quantity II < Quantity III

(*e*) Quantity II < Quantity I = Quantity III

57. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

Time taken by A and B together to do a work is 8 days, time taken by A and C together to do that work is $\frac{40}{3}$ days, and time taken by B and C together to do that work is $\frac{20}{3}$ days.

Quantity I: Time taken by all the 3 persons together to finish the work.
Quantity II: Half of time taken by B alone to finish the work.
Quantity III: One-fifth of time taken by A alone to finish the work.

(*a*) Quantity I < Quantity II < Quantity III
(*b*) Quantity II < Quantity I < Quantity III
(*c*) Quantity II = Quantity I < Quantity III
(*d*) Quantity I > Quantity II = Quantity III
(*e*) Quantity II = Quantity I = Quantity III

58. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

If the speed of a boat in still water is 7 m/s more than the speed of the stream, the boat can cover 385 m downstream in 35 seconds.
Quantity I: If the speed of the boat in still water were 1 m/s less than its original speed in still water, then what would be the downstream speed of the boat?
Quantity II: If the speed of the boat in still water were 2 m/s more than its original speed in still water, then what would be the upstream speed of the boat?
Quantity III: Area of a circle is 616 cm^2. If an arc makes an angle of $32\frac{8}{11}°$ at the center of the circle, then find the length of the arc?

(*a*) Quantity I < Quantity II < Quantity III
(*b*) Quantity I = Quantity II > Quantity III
(*c*) Quantity I > Quantity II = Quantity III
(*d*) Quantity I > Quantity II > Quantity III
(*e*) Quantity I = Quantity II < Quantity III

59. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

Table given below shows the following data:

Boat	Downstream speed (in m/s)	Distance covered in 15 seconds in still water
A	15	180
B	20	255
C	12	135

Quantity I: If a man covers a certain upstream distance in 30 seconds by boat A, then in what time (seconds) he will cover the same upstream distance by boat C?
Quantity II: Upstream speed of boat C is what percent (numerical value) of that of boat B?
Quantity III: Find the difference between upstream distance (m) covered by boat A in 24 seconds and that covered by boat B in 19 seconds?

(*a*) Quantity III > Quantity II > Quantity I
(*b*) Quantity II > Quantity I > Quantity III
(*c*) Quantity III > Quantity I > Quantity II
(*d*) Quantity I > Quantity II > Quantity III
(*e*) Quantity II > Quantity III > Quantity I

60. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

Ratio between length, breadth and height of a cuboid is 4 : 2 : 1 and the length of its diagonal is $8\sqrt{21}$ cm.
Quantity I: What is the total surface area (cm^2) of the cuboid?
Quantity II: If a cube is formed by melting down the cuboid, then what will be the total surface area (cm^2) of the cube?
Quantity III: A, B and C together can complete a work in 5 days, A and B together can complete the work in 10 days and ratio of A's efficiency to C's efficiency is 2 : 3. If they are paid a total of ₹5100 and they distribute it in the ratio of their efficiencies, then find the difference between B's wages and C's wages (₹)?

(*a*) Quantity I = Quantity II = Quantity III or relation can't be established
(*b*) Quantity I ≥ Quantity III > Quantity II
(*c*) Quantity I < Quantity II < Quantity III
(*d*) Quantity I > Quantity III > Quantity II
(*e*) Quantity I = Quantity II > Quantity III

61. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

In a mixture of milk and water, quantity of milk is 20 L more than that of water and cost of the mixture is ₹28 per L. When 5 L milk and 5 L water is added to the mixture, cost of the mixture becomes ₹$26\frac{2}{3}$ per L.

Quantity I: What is the initial quantity of milk in the mixture?
Quantity II: Initial quantity of water in the mixture is what percent of initial quantity of mixture?
Quantity III: If 10 L milk were added to the initial mixture, then what would be the cost of the mixture?

(*a*) Quantity I > Quantity II > Quantity III
(*b*) Quantity I < Quantity II = Quantity III
(*c*) Quantity I = Quantity II = Quantity III
(*d*) Quantity I = Quantity II > Quantity III
(*e*) Quantity I > Quantity II = Quantity III

62. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

There are 3 members P, Q, and R in a family such that, average age of P and Q is 55 years, average age of Q and R is 50 years, and average age of P and R is 30 years.
Quantity I: Age of Q.
Quantity II: Sum of ages of P and R
Quantity III: Twice the age of R.

(*a*) Quantity I > Quantity II > Quantity III
(*b*) Quantity III > Quantity I > Quantity II
(*c*) Quantity II > Quantity III > Quantity I
(*d*) Quantity I > Quantity III > Quantity II
(*e*) Quantity III < Quantity I = Quantity II

63. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

Quantity I: A bag contains 6 red and 4 blue balls, find the probability of selecting 2 balls of different colour from the bag.

Quantity II: When '1' is added to a fraction it becomes $\frac{23}{15}$. Find the fraction if denominator is '7' more than numerator.

Quantity III: $\frac{8}{15}$

(*a*) Quantity I < Quantity II = Quantity III
(*b*) Quantity I > Quantity II = Quantity III
(*c*) Quantity I > Quantity II > Quantity III
(*d*) Quantity I < Quantity II < Quantity III
(*e*) Quantity I = Quantity II = Quantity III

64. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

Ratio of speed of car, bus, and train is 5 : 3 : 6. Car can cover 30 km more distance in 1.2 hours than what train can cover in 45 min.
Quantity I: Speed (in km/h) of bus.

paintings, then find the number of ways in which he can pick the paintings.

Quantity III: Surya asked a girl for her 10 digit mobile number but since he didn't have anything to write it down, he just memorized it. Upon reaching home, he tried to remember all the digits of the number but he could remember only the first 7 digits. Desperate as he is, he tried to dial all possible combinations to find the actual number. What is the maximum number of attempts that Surya needs to do before finding the actual number?

(*a*) Quantity III = Quantity I > Quantity II
(*b*) Quantity I = Quantity III = Quantity II
(*c*) Quantity I < Quantity III < Quantity II
(*d*) Quantity I = Quantity III < Quantity II
(*e*) Quantity II > Quantity I > Quantity III

79. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

A 240 m long train P can cross a '*d*' m long platform in '*t*' seconds and (*d* + 80) m long bridge in (*t* + 5) seconds. Another 200 m long train Q can cross the '*d*' m long platform in (*t* – 10) seconds and (*d* – 72) m long tunnel in (*t* – 13) seconds.

Quantity I: In what time (seconds) train Q can cross train P while running in the same direction?

Quantity II: Speed of train P is what percent (numerical value) of that of train Q?

Quantity III: If the value of '*d*' is 160 m, then find the total time taken (seconds) by train P to cross the '*d*' m long platform and that taken to cross the (*d* + 80) m long bridge?

(*a*) Quantity III = Quantity I > Quantity II
(*b*) Quantity I = Quantity III = Quantity II
(*c*) Quantity I < Quantity III < Quantity II
(*d*) Quantity I = Quantity III < Quantity II
(*e*) Quantity II > Quantity I > Quantity III

80. In the following question, three quantities I, II and III are given. Compare quantity I, quantity II and quantity III on its basis. (Only quantity is to be considered)

Quantity I: Ajay took a loan of a certain amount from a bank at 20% p.a. compound interest, compounded annually for three years. At the end of 2 years, he returned Rs. 9000 and cleared all his dues by giving Rs. 9936 at the end of third year. Find the amount of loan taken by him from the bank.

Quantity II: A man invests a certain sum in scheme 'A' for 2 years at a certain rate of simple interest. He invests Rs. 4000 more in scheme 'B' for 5 years at twice the rate of simple interest than scheme 'A'. His interest received from scheme 'B' is 7 times the interest from scheme 'A'. Find the amount invested in scheme 'A'.

Quantity III: A certain sum invested at a certain rate p.a. gives a simple interest of Rs. 5000 at the end of 2 years and a compound interest (compounded annually) of Rs. 5500 at the end of 2 years. Find the amount invested.

(*a*) Quantity I > Quantity II > Quantity III
(*b*) Quantity I > Quantity II < Quantity III
(*c*) Quantity I < Quantity II = Quantity III
(*d*) Quantity I = Quantity II > Quantity III
(*e*) Quantity I > Quantity II = Quantity III

PAST YEAR QUESTIONS

Directions (81-83): In the following questions, two statements numbered I and II are given. On solving them, we get quantities I and II, respectively. Compare both quantities and choose the correct option.

[SBI PO Mains 2024]

81. Quantity I: (P − Q) (Q − R)(R − P) + PQR

Quantity II: $(PQ + QR)\ (P^2 + Q^2 + R^2)$

Given, $1 \le P \le 3$, $4 \le Q \le 6$, and $7 \le R \le 9$

(*a*) Quantity I ≤ Quantity II (*b*) Quantity I ≥ Quantity II
(*c*) Quantity I < Quantity II (*d*) Quantity I > Quantity II
(*e*) Quantity I = Quantity II or No relation

82. Quantity I: One root is common between equations x2 – 2x – 35 = 0 and x2 – Ax + 10 = 0, then find the value of A .

Quantity II: Ratio of ages of P to Q is 2 : 3 and sum of their ages is more than 25 years. Find the age of P.

(*a*) Quantity I > Quantity II (*b*) Quantity I < Quantity II
(*c*) Quantity I ≥ Quantity II (*d*) Quantity I ≤ Quantity II
(*e*) Quantity I = Quantity II or relation can't be established

83. Quantity-I: Draupadi bought a scooter of marked price ₹24000 at two successive discounts of 15% and 10%, respectively. If she spends ₹2500 on its maintenance, and then sells it at ₹26075, then find the percentage of profit/loss incurred by Draupadi.

Quantity-II: Shubhadra scored 32% marks in an examination and failed by 15 marks, while Vrushali scored 10% of the total marks in the same exam. The sum of the passing marks and the marks obtained by Vrushali is 120. If Uttara scored 60 marks out of total marks, then marks obtained by Uttara is what percentage of the total marks?

(*a*) Quantity-I > Quantity-II (*b*) Quantity-I < Quantity-II
(*c*) Quantity-I ≤ Quantity-II
(*d*) Quantity-I = Quantity-II or No relation
(*e*) Quantity-I ≥ Quantity-II

84. If $\frac{P+Q}{3} = 8$ and Q + R = 12, Also 14 ≥ P > Q > 9 and 10 ≥ Q > R>1.

(Note: P, Q and R are the integers)

Quantity I: Value of P + 7

Quantity II: Value of 2R + Q **[SBI Clerk Mains 2023]**

(*a*) Quantity I > Quantity II (*b*) Quantity I < Quantity II
(*c*) Quantity I ≥ Quantity II (*d*) Quantity I ≤ Quantity II
(*e*) Quantity I = Quantity II or no relation

85. An article is marked up by Rs 1440 above its cost price which is 'x'. It sold at a discount of 0.27x and the profit earned by the shopkeeper is 7%.

Quantity I: Find the value of Rs (*x* – 475).

Quantity II: If cost price of the article is increase by 37.5% and sell at a profit of 25%, then find the profit (in Rs).

[SBI Clerk Mains 2023]

(*a*) Quantity I > Quantity II
(*b*) Quantity I < Quantity II
(*c*) Quantity I ≥ Quantity II
(*d*) Quantity I ≤ Quantity II
(*e*) Quantity I = Quantity II or no relation

86. A and B are an integer.

Quantity I: $\sqrt[3]{343a^3} - 2a^4 + 65a$, where $9 \le a \le 11$.

Quantity II: $32b + 9 \times 64^{\frac{1}{b}}$, where $2 \le b \le 4$.

[SBI Clerk Mains 2023]

(*a*) Quantity I > Quantity II
(*b*) Quantity I < Quantity II
(*c*) Quantity I ≥ Quantity II
(*d*) Quantity I ≤ Quantity II
(*e*) Quantity I = Quantity II or no relation

87. Total surface area of the cuboid is 304 cm^2.

Quantity I: Ratio of the length and the height of the cuboid is 5 : 2 and the breadth is double of the height. Find the cost of painting the floor of the cuboid at the cost of Rs. 15/cm^2.

Quantity II: Perimeter of a sheet having the shape of the equilateral triangle is 24 cm. Find the cost of painting triangular sheet at the cost of Rs 20/cm^2. **[SBI Clerk Mains 2023]**

(*a*) Quantity I > Quantity II (*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II (*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or no relation

Directions (88-90): In the given questions, two quantities are given, one as 'Quantity I' and another as 'Quantity II'. You have to determine the relationship between two quantities and choose the appropriate option.

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or no relation **[SBI Clerk Mains 2022]**

88. Quantity I: P, Q, R are three consecutive whole numbers such that P + Q + R $= \sqrt[3]{216}$, then value of x, if 6(2x)Q – 144xp + 27(2)R = 0

Quantity II: Value of y, if $3y^2 - 14y + 15 = 0$

89. A bag contains four yellow toffees, Z black toffees and five grey toffees. If one toffee drawn at then random then probability of being grey is $\frac{1}{4}$.

Quantity I: $\frac{12}{29}$

Quantity II: If two toffees taken out from the bag at random, then what will be the probability of that two toffees are black toffees.

90. Quantity I: When the two-digits of a natural number are reversed, the new number is 54 more than the original number. If sum of digits of the number is 10, then find the original number.

Quantity II: A shopkeeper marked an article 80% above its cost price and allows two successive discount 20% and X% respectively. If the cost price of the article is Rs.1450 and he earned 8% profit, then find the value of 1.5X.

Directions (91-93): Following questions have two quantities as Quantity I and Quantity II. You have to determine the relationship between them reduce and give an answer as,

(*a*) Quantity I > Quantity II

(*b*) Quantity I ≥ Quantity II

(*c*) Quantity II > Quantity I

(*d*) Quantity II ≥ Quantity I

(*e*) Quantity I = Quantity II (*or*) Relation cannot be established **[SBI Clerk Mains 2021]**

91. Quantity I: The downstream speed of boat A is 10 km/hr more than the downstream speed of boat B. The sum of the downstream speed of boat A and upstream speed of boat B is 90 km/hr, then find the speed of boat B in still water if both travel in the same river.

Quantity II: The speed of boat A in still water is 40 km/hr more than the speed of the stream and the speed of boat B in still water is 30 km/hr more than the speed of the stream. If both boats travel in the same river, then find the average upstream speed of boats A and B?

92. Quantity I: The shopkeeper had purchased two jewel boxes for Rs.2250 each. He sold one at 40% profit and another one at 16.67% loss and then find the overall profit/loss on his whole transaction.

Quantity II: Ratio of the marked price and the cost price of a printer is 8 : 5. If the shopkeeper gives a discount of Rs.2160 and he gets the profit of 12%, then find the profit obtained by selling a printer.

93. Quantity I: In bag A, 19 green balls, 11 yellow balls and some red balls. If the probability of selecting a red ball from bag A is $\frac{3}{5}$. Then the number of red balls in bag A is what percentage of the total number of balls?

Quantity II: In bag B there are some black balls and blue balls. The average number of blue and black balls is 28. If 4 blue and 8 black balls are added to bag B and the ratio of the number of blue balls to black balls in bag B becomes 9:8, then the number of black balls in bag B initially is what percentage of the number of blue balls in the same bag initially?

94. Quantity I. Find the remainder when (1! + 2! + 3! + ... + 100!) divided by 24.

Quantity II. Find the unit digit of $(1^{4k} + 2^{4k} + 3^{4k} + 4^{4k} + 5^{4k})$, where *k* is a natural number. **[SBI Clerk Mains 2021]**

(*a*) Quantity I > Quantity II (*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II (*d*) Quantity I = Quantity II

(*e*) Quantity I ≤ Quantity II

95. A cuboid has a total surface area (TSA) of 148 cm2 and a volume of 120 cm3. Its length is l cm, breadth is b cm, and height is h cm. l, b, and h, are consecutive integers.

Given, $l > b > h$.

Quantity I: Lateral surface area (LSA) of cuboid.

Quantity II: Total surface area of a cube with side '*b*'. **[SBI PO Mains 2025]**

(*a*) Quantity I > Quantity II

(*b*) Quantity I < Quantity II

(*c*) Quantity I ≥ Quantity II

(*d*) Quantity I ≤ Quantity II

(*e*) Quantity I = Quantity II or no relation

96. The volume of a cuboid is 150 cubic meters, and the lateral surface area of the cuboid is 160 square meters. The length, breadth, and height of the cuboid are 'l', 'b', and 'h', respectively, and they are integers. (h > l > b)

Quantity I: $l - \frac{b}{3} - \frac{h}{5}$

Quantity II: $3b \times \frac{l}{h}$

Quantity III: $2b - l \div h$ **[SBI PO Mains 2025]**

(*a*) Quantity I < Quantity II < Quantity III

(*b*) Quantity I < Quantity II > Quantity III

(*c*) Quantity I ≥ Quantity II = Quantity III

(*d*) Quantity I ≤ Quantity II > Quantity III

(*e*) Quantity I = Quantity II < Quantity III

97. I. $x^2 - Px + 32 = 0$ (Roots of the equation is 4 and 4A.) 2(cube root of Y) = Square root of Y.

Quantity I: Find the value of 2a.

$Z^2 - KZ + 840 = 0$ (a and b are root of the equation and the value of K = 5P –2.)

Quantity II: Find the value of (Y + A – 6).

Quantity III: Find the value of (Y + 2) – Highest root of the equation I. **[SBI PO Mains 2025]**

(*a*) Quantity I < Quantity II < Quantity III

(*b*) Quantity I < Quantity II > Quantity III

(*c*) Quantity I ≥ Quantity II = Quantity III

(*d*) Quantity I ≤ Quantity II > Quantity III

(*e*) Quantity I = Quantity < Quantity III

98. Direction: In the following question, three quantities are given. You have to find the relationship among them and mark your answer.

Quantity I: 12 men and 8 women together can do a job in 20 days, while 6 men and 14 women together can do it in 15 days. Find the number of days taken by 3 men and 3 women together to complete the same job. (Only numerical value)

LEVEL-1

1. (*a*) Quantity I:

Logic is the series is:

18 23 34 55 98 183 354 695

+5 +11 +21 +43 +85 +171 +341

× 2 + 1 × 2 – 1 × 2 + 1 × 2 – 1 × 2 + 1 × 2 – 1

Missing terms = 23 and 55

Required difference = 55 – 23 = 32

Quantity II: 11x2 – Ax – 6 = 0

Let the roots of the above equation be 'x' and 'y' ($x > y$).

In the above equation, product of roots = $xy = -\frac{6}{11}$

Difference between roots of the equation = $x - y = \frac{35}{11}$

We know that: $(x + y)2 = (x - y)2 = 4xy$

$(x + y)2 = \left(\frac{35}{11}\right)^2 + 4 \times \left(-\frac{6}{11}\right)$

$(x + y)2 = \frac{1225}{121} - \frac{264}{121} = \frac{961}{121} = \left(\frac{31}{11}\right)^2$

$x + y = \frac{31}{11} = \frac{A}{11}$

After comparing:

A = 31

Hence, Quantity I > Quantity II

2. (*b*) Quantity I:

Let time taken by B alone and C alone to complete the work is 't' hours and '2t' hours.

So, $\frac{1}{t} + \frac{1}{2t} = \frac{1}{8}$

$t = 12$

Time taken by B alone to complete the work = 12 hours

Since, time taken by A and B together to complete the work = 9 hours

So, $\frac{1}{A} + \frac{1}{12} = \frac{1}{9}$

A = 36

Time taken by A alone to complete the work = 36 hours

Quantity II:

Let the CP of the article = 100x

So, SP of the article

$100x \times \frac{180}{100} \times \frac{95}{100} \times \frac{80}{100} = 136.8x$

Profit percent = 36.8%

Hence, Quantity I < Quantity II

3. (*e*) Quantity I:

SI received on ₹'P' at 5% rate after 2 years:

$\frac{P \times 5 \times 2}{100} = ₹\frac{P}{10}$

CI received on ₹'P' at 5% rate after 2 years:

$P \times \left(1 + \frac{5}{100}\right)^2 - P = ₹\frac{41P}{400}$

Since, $x : y = \frac{P}{10} : \frac{41P}{400} = 40 : 41$

So, $x = 40$

Quantity II:

Difference between CI and SI received = $P\left(\frac{R}{100}\right)^2$

Since, rate of interest is given. So, we cannot determine the difference between SI and CI after 2 years.

Hence, the relation between Quantity I and Quantity II cannot be determined.

4. (*e*) Let the speed of boat B = 'x' m/s

So, the speed of bike A = (x + 3) m/s

And bike B is running 117 m ahead of bike A.

Quantity I:

Time taken by bike A to cross bike B = $\frac{117}{(x+3)-x}$ = 39 seconds

Quantity II:

Since, we don't know the speed of bike A.

So, we can't determine the distance covered by bike A till it crosses bike B.

Hence, relation can't be established.

5. (*a*) Downstream speed of the boat = $\frac{270}{18}$ = 15 m/s

Upstream speed of the boat = $\frac{216}{24}$ = 9 m/s

The speed of the boat in still water = $\frac{15+9}{2}$ = 12 m/s

The speed of the stream = $\frac{15-9}{2}$ = 3 m/s

Quantity I:

Required percentage = $\frac{12-3}{3} \times 100$ = 300%

Quantity II:

Original speed of the boat in still water = $\frac{15+9}{2}$ = 12 m/s

So, the new speed of the boat in still water would be = $116\frac{2}{3}\%$ of 12 = 14 m/s

Since, the speed of the stream = $\frac{15-9}{2}$ = 3 m/s

So, the downstream distance covered by the boat in 15 seconds would be = 15 × (14 + 3) = 255 m

Hence, Quantity I > Quantity II

6. (*a*) Quantity I:

Ratio of CI to SI on a certain sum at R% rate after 2 years:

$\frac{200 + R}{200} = \frac{53}{50}$

R = 12%

Now, the interest received on ₹1500 at 18% rate after 1 year:

$\frac{1500 \times 18}{100} = ₹270$

And the interest received on ₹2000 at 15% rate after 1 year:

$\frac{2000 \times 15}{100} = ₹300$

Required percentage = $\frac{270}{300} \times 100$ = 90%

Quantity II:

Let the lengths of trains A and B are '$5d$' m and '$4d$' m respectively.

So, $\frac{5d+200}{18} = t+5$ ...(1)

And, $\frac{4d+160}{24} = t-5$ ...(2)

From equations (1) and (2):

$\frac{5d+200}{18} = \frac{4d+160}{24}+10$

$\frac{5d+200}{3} = \frac{4d+160+240}{4}$

$20d + 800 = 12d + 1200$

$d = 50$

Length of train A = $5 \times 50 = 250$ m

Length of train B = $4 \times 50 = 200$ m

Now, the time taken by train B to cross train A while running in the same direction = $\frac{250+200}{24-18} = 75$ seconds

Hence, Quantity I > Quantity II

7. (*a*) Quantity I:

Let the numbers A and B are 'x' and '$2x$' respectively and the numbers C and D are '$2y$' and '$3y$' respectively.

So, $3y - 2x = 2y$

$y = 2x$ ...(1)

And, $x + 2y = 35$

From equation (1):

$x + 4x = 35$

$x = 7$

From equation (1):

$y = 14$

Now, the numbers A and B are 7 and 14 respectively and the numbers C and D are 28 and 42 respectively.

So, required average = $\frac{7+14+28+42}{4} = 22.75$

Quantity II:

Let quantities of milk and water in mixture A are '$4x$' L and 'x' L respectively and that in mixture B are '$2y$' L and 'y' L respectively.

So, $5x - 3y = 10$ ...(1)

And, $\frac{(4x+2y)\times 36}{5x+3y} = 27$

$16x + 8y = 15x + 9y$

$x = y$

From equation (1):

$x = y = 5$

Total quantity of milk in the new mixture = $4 \times 5 + 2 \times 5 = 30$ L

Total quantity of water in new mixture = $5 + 5 = 10$ L

Required difference = $30 - 10 = 20$ L

Hence, Quantity I > Quantity II

8. (*e*) $x2 - 43x + 420 = 0$

$x2 + 28x - 15x + 420 = 0$

$x(x - 28) - 15(x - 28) = 0$

$x = 15$ or 28

Quantity I:

Rate of interest for the 1st year = 15%

Rate of interest for the 2nd year = $(15 - 5) = 10\%$

Let the amount invested in the scheme is ₹P.

So, $P \times \frac{115}{100} \times \frac{110}{100} - P = 1113$

$506P - 400P = 445200$

$P = 4200$

So, the amount invested in the scheme = ₹4200

Quantity II:

Let the CP of the article = ₹$100x$

So, MP of the article = ₹$(100x + 2100)$

And SP of the article = ₹$105x$

Since, discount given = $28 + 2 = 30\%$

So, $(100x+2100)\times\frac{70}{100} = 105x$

$100x + 2100 = 150x$

$x = 42$

So, CP of the article = ₹4200

Hence, Quantity I = Quantity II

9. (*d*) Quantity I:

$(a + 1) \times (b + 1) = 319 = 1 \times 319 = 11 \times 29$

Since 'a' and 'b' are nonzero numbers. So, 1×319 is not valid.

Let $a > b$

After comparing:

$a + 1 = 29 \Rightarrow a = 28$

$b + 1 = 11 \Rightarrow b = 10$

Sum of 'a' and 'b' = $28 + 10 = 38$

Product of 'a' and 'b' = $28 \times 10 = 280$

Required sum = $38 + 280 = 318$

Quantity II:

Ratio of profit of P and Q = $(4500 \times 15) : (7500 \times 12) = 3 : 4$

Total profit amount from the business ≥ ₹2226

Difference between profit share of P and Q ≥ $2226\times\frac{4-3}{4+3}$ ≥ ₹318

Hence, Quantity I ≤ Quantity II

10. (*e*) Since, profit percent is 25% which means the quantity of water in mixture A is 25% of the quantity of milk in it.

Ratio of milk to water in mixture A = $100 : 25 = 4 : 1$

Ratio of milk to water in mixture B when quantity of water is doubled = $1 : 1$

Ratio of milk to water in mixture B = $3 : \frac{4}{2} = 3 : 2$

Let ratio part of milk in mixture C = C

By the rule of alligation

$\frac{4}{5}$ C $\frac{3}{5}$

2 1

$\frac{3}{5} - C : C - \frac{4}{5} = 2 : 1$

$\frac{3}{5} - C = 2C - \frac{8}{5}$

$3C = \frac{11}{5}$

$C = \frac{11}{15}$

Quantity I:

According to the question:

$A\% = \frac{15-11}{15}\times 100$

$A\% = 26.67\%$

$A = 26.67$

Quantity II:

Quantity of milk = $150\times\frac{11}{15} = 110$ L

Let number of paintings in the line before Surya picks 'A' be 'm'. Number of paintings between 'A' and 'B' be 'n', number of paintings between 'B' and 'C' be 'o', number of paintings between 'C' and 'D' be 'p' and number of paintings after 'D' be 'q'.

According to question;

$(m + n + o + p + q) = 20 - 4$

$(m + n + o + p + q) = 16$

But, since 'n', 'o' and 'p' are more than 1, let's subtract 3 from RHS and add 1 to each of 'n', 'o' and 'q' so that they always are more than or equal to 1

So, $m + n + o + p + q = 13$

We, know that number of ways of distributing 'n' identical items in 'r' different ways = $(n + r - 1)C(r - 1)$

So, number of possible solutions = $(13 + 5 - 1)C4 = 17C4 = 2380$

So, Quantity II = 2380

Quantity III:

Possible combinations for last three digits

$= 10 \times 10 \times 10 = 1000$

So, Surya needs to dial $1000 - 1 = 999$ numbers before finding the actual number.

So, Quantity III = 999

Therefore, Quantity I < Quantity III < Quantity II

79. (*d*) Let the speed of train P is 'x' m/s.

So, $\frac{240 + d}{x} = t$ ...(1)

And, $\frac{240 + d + 80}{x} = t + 5$ ...(2)

From equations (1) and (2):

$\frac{240 + d + 80}{x} = \frac{240 + d - 5x}{x}$

$x = 16$

Let the speed of train Q is 'y' m/s.

So, $\frac{200 + d}{y} = t - 10$ ...(3)

And, $\frac{200 + d - 72}{y} = t - 13$ ...(4)

From equations (3) and (4):

$\frac{200 + d - 72}{y} = \frac{200 + d - 3y}{y}$

$y = 24$

Quantity I:

Length of train P = 240 m

Speed of train P = 16 m/s

Length of train Q = 200 m

Speed of train Q = 24 m/s

Time taken by train Q to cross train P while running in the same direction = $\frac{240 + 200}{24 - 16}$ = 55 seconds

Quantity II:

Speed of train P = 16 m/s

Speed of train Q = 24 m/s

Required percentage = $\frac{16}{24} \times 100 = 66.67\%$

Quantity III:

If value of 'd' = 160 m

And speed of train P = x = 16 m/s

From equation (1):

$\frac{240 + 160}{16} = t$

$t = 25$

So, required time = $t + (t + 5) = 25 + (25 + 5) = 55$ seconds

Hence, Quantity I = Quantity III < Quantity II

80. (*b*) Quantity I:

Let amount of loan taken by Ajay from the bank is Rs. 'x'

According to question;

$1.20 \times [(1.2)2 \times x - 9000] = 9936$

Or, $1.44x - 9000 = 8280$

Or, $1.44x = 17280$

Or, $x = 12000$

So, Quantity I = Rs. 12000

Quantity II:

Let amount invested in scheme 'A' is Rs. 'P' and rate of interest offered in scheme 'A' is R% p.a.

So, simple interest received from scheme 'A' = X = (P × R × 2) ÷ 100 ...(1)

Rate of interest offered in scheme 'B' = 2R%

So, simple interest received from scheme 'B' = 7X = {(P + 4000) × 2R × 5} ÷ 100 ...(2)

Equation (II) ÷ Equation (I)

$7 = \{(P + 4000) \times 2R \times 5\} \div (P \times R \times 2)$

$7P = 5P + 20000$

Or, $2P = 20000$

Or, $P = 10000$

So, Quantity II = Rs. 10000

Quantity III:

Simple interest for 1 year = 5000 ÷ 2 = Rs. 2500

Difference between compound interest and simple interest = 5500 – 5000 = Rs. 500

Rate of interest = $\frac{500}{2500} \times 100 = 20\%$

Sum invested = 2500 ÷ 0.20 = Rs. 12500

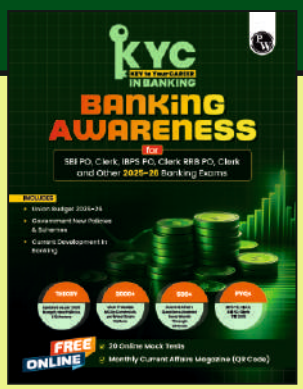
Quantity I > Quantity II < Quantity III

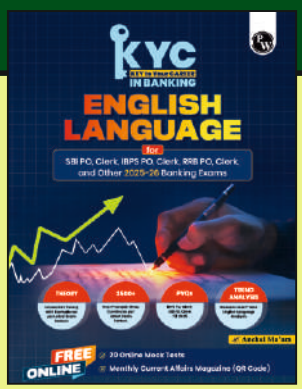
❑❑❑

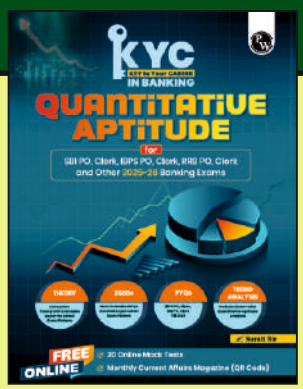
PYQs Answer Key
(Scan QR code for Detailed Explanation)

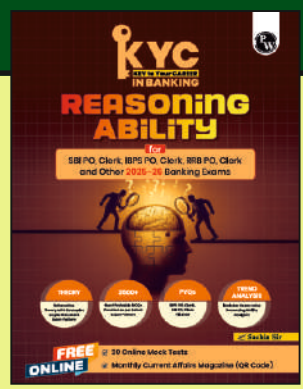
81. (*c*)	**82.** (*b*)	**83.** (*a*)	**84.** (*a*)	**85.** (*a*)	**86.** (*b*)	**87.** (*a*)	**88.** (*c*)	**89.** (*a*)	**90.** (*b*)
91. (*a*)	**92.** (*c*)	**93.** (*c*)	**94.** (*d*)	**95.** (*b*)	**96.** (*a*)	**97.** (*d*)	**98.** (*b*)	**99.** (*b*)	**100.** (*e*)
101. (*b*)	**102.** (*a*)	**103.** (*b*)	**104.** (*b*)	**105.** (*a*)	**106.** (*a*)	**107.** (*e*)	**108.** (*a*)	**109.** (*a*)	**110.** (*e*)
111. (*e*)	**112.** (*a*)	**113.** (*a*)	**114.** (*b*)	**115.** (*b*)	**116.** (*a*)	**117.** (*b*)	**118.** (*a*)	**119.** (*d*)	

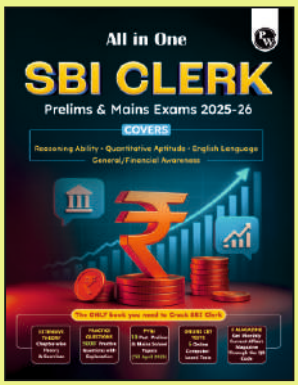
Important Books for Banking Exams

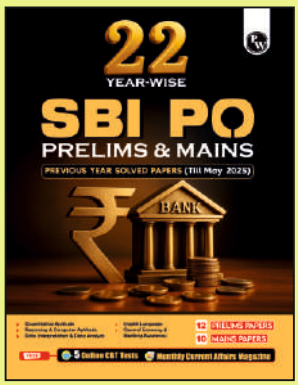


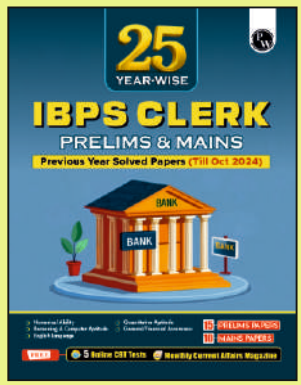


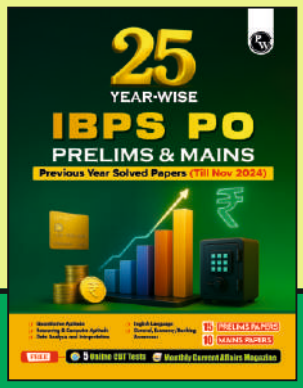


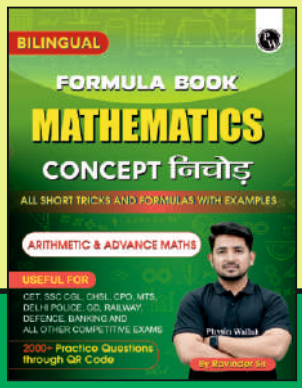












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