

IBPS CLERK Question paper 2017- Quantitative Aptitude

Direction (1-5): What should come in the place of question mark (?) in the following number series?

Q 1.

7 10 16 28 ? 100

1. 34
2. 40
3. 52
4. 60
5. 78

Answer: 3

Solution 1:

7 10 16 28 ? 100

$$7 \times 2 - 4 = 10$$

$$10 \times 2 - 4 = 16$$

$$16 \times 2 - 4 = 28$$

$$28 \times 2 - 4 = 52$$

$$52 \times 2 - 4 = 100$$

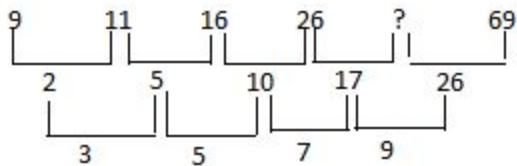
Q 2.

9 11 16 26 ? 69

1. 31
2. 38
3. 43
4. 45
5. 46

Answer: 3

Solution 2:



Q 3.

3 4 10 33 136 ?

1. 150
2. 298
3. 463
4. 572
5. 685

Answer: 5

Solution 3:

3 4 10 33 136 ?

$$3 \times 1 + 1 = 4$$

$$4 \times 2 + 2 = 10$$

$$10 \times 3 + 3 = 33$$

$$33 \times 4 + 4 = 136$$

$$136 \times 5 + 5 = 685$$

Q 4.

2 3 6 15 45 ?

1. 90
2. 135
3. 157.5
4. 200
5. 225

Answer: 3

Solution 4:

2 3 6 15 45 ?

$$2 \times 1.5 = 3$$

$$3 \times 2 = 6$$

$$6 \times 2.5 = 15$$

$$15 \times 3 = 45$$

$$45 \times 3.5 = 157.5$$

Q 5.

24 25 ? 41 -8 73

1. 13
2. 16
3. 25
4. 43
5. 50

Answer: 2

Solution 5:

$$24 \quad 25 \quad ? \quad 41 \quad -8 \quad 73$$

$$24 + 1^2 = 25$$

$$25 + 3^2 = 16$$

$$16 + 5^2 = 41$$

$$41 + 7^2 = -8$$

$$-8 + 9^2 = 73$$

Directions (6-10): What value should come in place of the question mark (?) in the following question?

Q 6.

$$12.5 \times 14 \div 8.75 + 42 = 50 + ?$$

1. 18
2. 12
3. 32
4. 42
5. 65

Answer: 2

Solution 6:

$$13 \times (14/9) + 42 = 50 + ?$$

$$182/9 + 42 = 50 + ?$$

$$182/9 = 50 - 42 + ?$$

$$182/9 = 8 + ?$$

$$? = 20 - 8$$

$$? = 12$$

Q 7.

$$44^2 + 23^2 = (?)^2 + 4^4$$

1. 47
2. 65
3. 52
4. 41
5. 87

Answer: 1

Solution 7:

$$44^2 + 23^2 = (?)^2 + 4^4$$

$$1936 + 529 = (?)^2 + 256$$

$$2465 = (?)^2 + 256$$

$$(?)^2 = 2209$$

$$? = (47)^2$$

$$? = 47$$

Q 8.

$$33 \frac{1}{3} \% \text{ of } 768.9 + 25\% \text{ of } 161.2 - 58.12 = ?$$

1. 252
2. 278
3. 232
4. 240
5. 155

Answer: 4

Solution 8:

$$33 \frac{1}{3} \% \text{ of } 768.9 + 25\% \text{ of } 161.2 - 58.12 = ?$$

$$256 + 40.25 - 58 = ?$$

$$? = 238.8$$

Since, 238.8 is close to 240. The answer is option 4.

Q 9.

$$[(\sqrt{529} \times 36) \div 48] \times ? = 5847.75$$

1. 317
2. 346
3. 339
4. 325
5. 344

Answer: 5

Solution 9:

$$[(\sqrt{529} \times 36) \div 48] \times ? = 5847.75$$

$$[(23 \times 36) \div 48] \times ? = 5847.75$$

$$(828 \div 48) \times ? = 5847.75$$

$$17 \times ? = 5847.75$$

$$? = 5848 \div 17$$

$$? = 344$$

Q 10.

$$623.529 + 49.1972 \times 20.689 - 68.571 = ?$$

1. 27200
2. 600
3. 12800

4. 2550
5. 1573

Answer: 5

Solution 10:

$$623.529 + 49.1972 \times 20.689 - 68.571 = ?$$

$$623.529 + 1017.84087 - 68.571 = ?$$

$$1572.798 = ?$$

1 Since 1572.798 is approximately equal to 1573. The correct answer is option 5

Directions (11-15): Table given below shows the number of tickets sold in six different theatres, number of tickets sold to children and remaining ticket sold to adults [male and female]. Study the data carefully and answer the following questions.

Note: Total 80 tickets are sold in each theatre.

Theatre	Tickets sold to Children	Tickets sold to Adults (male: female)
C1	15	6:7
C2	10	3:4
C3	20	2:3
C4	14	6:5
C5	8	5:4
C6	12	9:8

Q 11. Find the ratio of the number of tickets sold to males by C3 and C6 theatre together to the number of tickets sold to females by C3 and C5 theatre together.

1. 14: 19
2. 15: 17
3. 20: 23
4. 16: 19
5. 14: 17

Answer: 2

Solution 11:

number of tickets sold to males by C3 = 24

number of tickets sold to males by C6 = 36

number of tickets sold to males by C3 and C6 theatre together = 24 + 36 = 60

number of tickets sold to females by C3 = 36

number of tickets sold to females by C5 = 32

number of tickets sold to females by C3 and C5 theatre together = $36 + 32 = 68$

Ratio = $60 : 68 = 15:17$

Q 12. The number of females who bought the tickets from C2 and C4 Theater together is what per cent more than the number of males who bought the ticket from C5 theatre.

1. $33 \frac{1}{3} \%$
2. 50%
3. $66 \frac{2}{3} \%$
4. 75%
5. 87.5%

Answer: 4

Solution 12:

number of females who bought the tickets from C2 = 40

number of females who bought the tickets from C4 = 30

number of females who bought the tickets from C2 and C4 Theater together = $40 + 30 = 70$

number of males who bought the ticket from C5 theatre = 40

Percentage = $[(70-40) / 40] \times 100 = 75\%$

Q 13. If per ticket price for children, male and female are Rs. 150, Rs. 200 and Rs. 250 respectively. Then find the total revenue earned by C4 theatre.

1. 16600
2. 15400
3. 16800
4. 15800
5. 16400

Answer: 3

Solution 13:

Revenue earned by the tickets sold for children = $150 \times 14 = 2100$

Revenue earned by the tickets sold for male = $[(6/11) \times 66] \times 200 = 7200$

Revenue earned by the tickets sold for female = $[(5/11) \times 66] \times 250 = 7500$

Total revenue earned = $2100 + 7200 + 7500 = 16800$

Q 14. Find the average number of male who bought tickets from C1, C2 and C3 theatre together.

1. 30
2. 28
3. 32
4. 34
5. 36

Answer: 2

Solution 14:

number of males who bought tickets from C1 = $(\frac{6}{13}) \times 65 = 30$

number of males who bought tickets from C2 = $(\frac{3}{7}) \times 70 = 30$

number of males who bought tickets from C3 = $(\frac{2}{5}) \times 60 = 24$

the average number of male who bought tickets from C1, C2 and C3 theatre together = $(30 + 30 + 24) / 3 = 28$

Q 15. The number of males who bought the ticket from C4, C5 and C6 together is how much more than the number of females who bought the ticket from the same theatres.

1. 18
2. 20
3. 21
4. 24
5. 26

Answer: 1

Solution 15:

number of males who bought the ticket from C4 = 36

number of males who bought the ticket from C5 = 40

number of males who bought the ticket from C6 = 36

Total number of males who bought tickets from C4, C5 and C6 = $36+40+36 = 112$

number of females who bought the ticket from C4 = 30

number of females who bought the ticket from C5 = 32

number of females who bought the ticket from C6 = 32

Total number of males who bought tickets from C4, C5 and C6 = $30+32+32 = 94$

Difference = $112 - 94 = 18$

Directions (16-19): Given below are two quadratic equations. Solve the equations and answer the following questions:

Q 16.

Equation I: $3x^2 + 18x + 24 = 0$

Equation II: $2y^2 - 11y + 15 = 0$

1. $x > y$
2. $y > x$
3. $x = y$ or no relation
4. $x \leq y$
5. $x \geq y$

Answer: 2

Solution 16:

Equation I: $3x^2 + 18x + 24 = 0$

$3x^2 + 6x + 12x + 24 = 0$

$3x(x+2) + 12(x+2)$

$x = -2 \text{ or } -4$

Equation II: $2y^2 - 11y + 15 = 0$

$2y^2 - 6y - 5y + 15 = 0$

$2y(y-3) - 5(y-3) = 0$

$y = 3 \text{ or } 2.5$

Therefore, $y > x$

Q 17.

Equation I: $(x - 12)^2 = 0$

Equation II: $y^2 - 21y + 108 = 0$

1. $x > y$
2. $y > x$
3. $x = y$ or no relation
4. $x \leq y$
5. $x \geq y$

Answer: 5

Solution 17:

Equation I: $(x - 12)^2 = 0$

$x^2 - 24x + 144 = 0$

$x^2 - 12x - 12x + 144 = 0$

$x(x-12) - 12(x-12) = 0$

$x = 12$

Equation II: $y^2 - 21y + 108 = 0$

$y^2 - 9y - 12y + 108 = 0$

$y(y-9) - 12(y-9) = 0$

$y = 9 \text{ or } 12$

Therefore, $x \geq y$

Q 18.

Equation I: $2x^2 + 7x + 5 = 0$

Equation II: $3y^2 + 12y + 9 = 0$

1. $x > y$
2. $y > x$
3. $x = y$ or no relation
4. $x \leq y$

5. $x \geq y$

Answer: 3

Solution 18:

Equation I: $2x^2 + 7x + 5 = 0$

$$2x^2 + 2x + 5x + 5 = 0$$

$$2x(x+1) + 5(x+1) = 0$$

$$x = -2.5 \text{ or } -1$$

Equation II: $3y^2 + 12y + 9 = 0$

$$3y^2 + 3y + 9y + 9 = 0$$

$$3y(y+1) + 9(y+1) = 0$$

$$y = -1 \text{ or } -3$$

Therefore, no relation

Q 19.

Equation I: $x^2 + 2x - 35 = 0$

Equation II: $y^2 + 15y + 56 = 0$

1. $x > y$

2. $y > x$

3. $x = y$ or no relation

4. $x \leq y$

5. $x \geq y$

Answer: 5

Solution 19:

Equation I: $x^2 + 2x - 35 = 0$

$$x^2 + 7x - 5x - 35 = 0$$

$$x(x+7) - 5(x+7) = 0$$

$$x = -7 \text{ or } 5$$

Equation II: $y^2 + 15y + 56 = 0$

$$y^2 + 7y + 8y + 56 = 0$$

$$y(y+7) + 8(y+7) = 0$$

$$y = -7 \text{ or } -8$$

Therefore, $x \geq y$

Q 20. The average age of A and B, 2 years ago was 26. If the age of A, 5 years hence is 40 years, and B is 5 years younger to C, then find the difference between the age of A and C?

1. 6

2. 9

3. 12

4. 15

5. 18

Answer: 2

Solution 20:

$$A + 5 = 40$$

$$A = 35 \text{ years}$$

$$B = C - 5$$

$$[(A+B) / 2] = 26$$

$$[(35 + B) / 2] - 2 = 26$$

$$[(35 + B) / 2] = 28$$

$$B = 35 - 26 = 9$$

Q 21. Kishan spends 30% of his salary on food and donates 3% in a charitable trust, he spends Rs.2,310 on these two items, then what is the total salary for that month?

1. Rs.6,000

2. Rs.8,000

3. Rs.9,000

4. Rs.36,000

5. Rs.7,000

Answer: 5

Solution 21:

Let the total salary be x

$$\text{Money spent on food} = (30/100)x$$

$$\text{Money spent on charitable trust} = (3/100)x$$

According to the question,

$$(30/100)x + (3/100)x = 2310$$

$$x = \text{Rs. } 7000$$

Q 22. Shyam mixed two qualities of rice 30 kg each and sold it at a rate of Rs.20.60 per kg. He purchased 30 kg at a rate of Rs.19.50 per kg. Then find out the price per kg of another 30 kg rice.

1. Rs.21.70 per kg

2. Rs.20.60 per kg

3. Rs.19.70 per kg

4. Rs.21.50 per kg

5. None of the above

Answer: 1

Solution 22:

Let the price of another 30 kg rice be Rs. x per kg

Then,

$$(30 \times 19.50) + 30x = 20.60 \times 60$$

$$585 + 30x = 1236$$

$$30x = 651$$

$$x = 21.70$$

Q 23. A group of men decided to do a job in 10 days. But since 20 men dropped out every day, the job was completed at the end of the 14th day. How many men were there in the beginning?

1. 345
2. 560
3. 455
4. 240
5. Cannot be determined

Answer: 3

Solution 23:

Let x be the initial number of worker then

$$10n = x + (x - 20) + (x - 40) + \dots + (x - 260)$$

$$10x = 14n - 1820$$

$$4x = 1820$$

$$x = 455 \text{ workers}$$

Q 24. The difference between simple and compound interest on a principal amount for two years at a rate of 25% is Rs 1700. What is the principal amount?

1. Rs 1700
2. Rs 1600
3. Rs 1800
4. Rs 2000
5. None of these

Answer: 2

Solution 24:

$$P \times (1 + 25/100)^2 - P \times 2 \times 25/100 = 1700$$

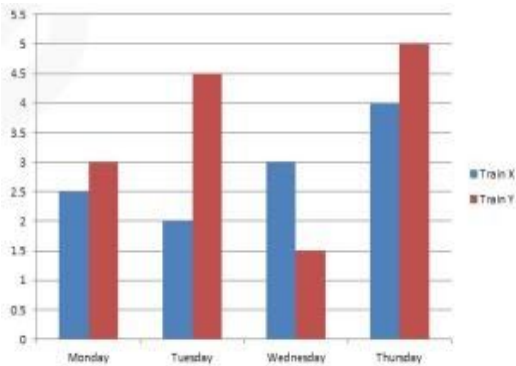
$$(25/16)P - (1/2)P = 1700$$

$$17/16 P = 1700$$

$$P = 1700 \times (16/17)$$

$$P = 1600$$

Directions (25-29): Bar graph given below shows the time taken by two trains in hr, on different days. Study the data carefully and answer the following questions:



Note: Both Trains cover 450km distance on every day

Q 25. Speed of train 'X' on Tuesday is what per cent more than the speed of train 'Y' on Monday?

1. $66\frac{2}{3}\%$
2. 75 %
3. $33\frac{1}{3}\%$
4. 50 %
5. 87.5 %

Answer: 4

Solution 25:

Speed of train X on Tuesday = $450/2 = 225$ km/hr

Speed of train Y on Monday = $450/3 = 150$ km/hr

Percentage = $[(225-150) / 150] \times 100 = 25 \times 2 = 50\%$

Q 26. Find the average speed of train 'Y' on Tuesday and Train 'X' on Wednesday?

1. 140
2. 130
3. 135
4. 125
5. 150

Answer: 4

Solution 26:

Speed of train Y on Tuesday = $450/4.5 = 100$ km/hr

Speed of train X on Wednesday = $450/3 = 150$ km/hr

Average speed = $(100+150) / 2 = 125$ km/hr

Q 27. On Friday, speed of train 'X' increases by 60% and speed of train 'Y' increases by 25% as compared to Thursday, then find the sum of the time taken by both trains separately to cover the same distance?

1. 6.5 hr
2. 7.5 hr
3. 6 hr
4. 7 hr
5. 8 hr

Answer: 4

Solution 27:

Speed of train X on Thursday = $450/4 = 112.5$ km/hr

Speed of train Y on Thursday = $450/5 = 90$ km/hr

After 60% increase, new speed of train X = 160% of 112.5 = 180 km/hr

After 25% increase, new speed of train Y = 125% of 90 = 112.5 km/hr

Time taken by train X = $450/180 = 3$ hr

Time taken by train Y = $450/112.5 = 4$ hr

Total time = $3 + 4 = 7$ hr

Q 28. Speed of train 'X' on Tuesday is how much less than the speed of train 'Y' on Wednesday?

1. 50 km/hr
2. 60 km/hr
3. 75 km/hr
4. 85 km/hr
5. 100 km/hr

Answer: 3

Solution 28:

Speed of train X on Tuesday = $450/2 = 225$ km/hr

Speed of train Y on Wednesday = $450/1.5 = 300$ km/hr

The difference in speed = $300 - 225 = 75$ km/hr

Q 29. Find how much time train 'X' can cover the given distance if the speed of train 'X' increases by 60% on Tuesday?

1. 3 hr
2. 2.5 hr
3. 1.5 hr
4. 1.25 hr
5. 1.75 hr

Answer: 4

Solution 29:

Speed of train X on Tuesday = $450/2 = 225$ km/hr

After 60% increase in speed, new speed = 160% of 225 = 360 km/hr

Time taken = $450/360 = 1.25$ hr

Q 30. Average of A, B, C is 45, A: B = 2:3, A+B = 95, then find B-C.

1. 18
2. 12
3. 15
4. 21
5. 17

Answer: 5

Solution 30:

$$(A+B+C) / 3 = 45$$

$$A + B + C = 45 \times 3$$

$$A + B + C = 135$$

$$A+B = 95$$

$$(A+B+C) - (A+B) = 135 - 95$$

$$C = 40$$

$$A : B = 2:3$$

$$2x + 3x = 95$$

$$X = 45$$

$$B-C = 57 - 40 = 17$$

Q 31. The annual salary of Arun is 7.68 lac. If he spends Rs. 12000 on his children, 1/13th of the rest of the salary on food and Rs. 8000 in mutual funds, then find the monthly savings he is left with.

1. Rs. 38000/-
2. Rs. 39500/-
3. Rs. 40000/-
4. Rs. 41250/-
5. Rs. 45000/-

Answer: 3

Solution 31:

$$\text{The monthly salary of Arun} = 768000/12 = \text{Rs.}64000$$

$$\text{Money spent on children} = \text{Rs. } 12000$$

$$\text{Money spent on food} = 52000 \times 1/13 = \text{Rs.}4000$$

$$\text{Remaining salary} = 52000 - 4000 = \text{Rs.}48000$$

$$\text{After investing in mutual funds, the remaining salary} = 48000 - 8000 = \text{Rs.}40000$$

Q 32. The difference between the simple interest obtained by investing Rs. 'X' with 8% per annum for a year and by investing Rs. 'X+1400' with 8% per annum for two years is 240 Rs. Find the value of X.

1. 200

2. 100
3. 400
4. 300
5. None of these

Answer: 1

Solution 32:

$$[(X+1400) \times 8 \times 2] / 100 - [(X \times 8 \times 1) / 100] = 240$$

$$(8x + 22400) / 100 = 240$$

$$X = 200$$

Q 33. Five years ago, the average age of P and Q was 15 years. The average age of P, Q and R today is 20 years. How old will R be after 10 years?

1. 20 years
2. 15 years
3. 29 years
4. 30 years
5. None of these

Answer: 4

Solution 33:

$$[(P+Q) / 2] - 5 = 15$$

$$P + Q = 40 \text{ years}$$

$$(P + Q + R) / 3 = 20$$

$$P + Q + R = 60$$

$$(P + Q + R) - (P + Q) = 60 - 40$$

$$R = 20$$

$$R + 10 = 30 \text{ years}$$

Q 34. There is 15% of the water in a grape mixture of 20 litres. What is the percentage of water if 4 more litres of grape juice is added to it.

1. 10%
2. 12.5%
3. 15%
4. 20%
5. None of the above

Answer: 2

Solution 34:

$$\text{Total water in 20 litres} = 3 \text{ litres}$$

$$\text{New mixture} = 20 + 4 = 24 \text{ litres}$$

Percentage of water in new mixture = $(3/24) \times 100 = 12.5\%$

Q 35. Two items A and B have equal cost price. Item A is sold at 40% profit and item B is sold at an amount 20% less than the selling price of item A. If the total profit is 156 Rs then find the cost price of A.

1. Rs. 300
2. Rs. 350
3. Rs. 400
4. Rs. 450
5. None of these

Answer: 1

Solution 35:

Let us take the cost price to be Rs.100

Then selling price of A = Rs.100 + 40 = Rs.140

Selling Price of B = $140 - (140 \times 0.2) = 140 - 28 = 112$

Total selling price of A and B combined together = $140 + 112 = \text{Rs.}252$

Total cost price of A & B combined together = Rs.200

So, by considering the cost price to be Rs.100 and Profit to be Rs.52,

Total Profit when CP is Rs.156 = $(100/52) \times 156 = \text{Rs.}300$