SBI PO Previous Year Question Paper 2019

Quantitative Aptitude (Questions & Solutions)

Q. (1) Four years hence, the sum of ages of A and B will be 16 years more than the sum of the present age of B and C. Four years ago, the sum of age of A and C is 32 years then find the present age of C?

1. 24 years
2. 20 years
3. 12 years
4. 16 years
5. 18 years

Answer: 4 (16 years)

Solution: Let, the present age of A, B and C be x, y and z respectively.

Therefore, according to the question,

$(x + 4) + (y + 4) = (y + z) + 16$

$\Rightarrow x - z = 8$ _____ (i)

Also, $(x - 4) + (z - 4) = 32$

$\Rightarrow x + z = 40$ _____ (ii)

From (i) and (ii),

$8 + z = 40 - z$

$\Rightarrow 2z = 32$

$\Rightarrow z = 16$

Q. (2) A person purchased two articles at the same price and on selling the first article he makes a profit of 12%. Selling price of second article is Rs 90 more than the selling price of the first article. Find the cost price of one article if his overall profit percentage is 15%?

1. Rs. 1800
2. Rs. 1500
3. Rs. 2000
4. Rs. 2400
5. None of these

Answer: 2 (Rs. 1500)

Solution: When we check from the given options,

Total CP = 1500 + 1500 = 3000 (Since the CP is same for both articles)

Therefore, profit % on article 1 is 12%.

Hence, 12 = [(SP - 1500) / 1500] x 100

⇒ 180 = SP - 1500

⇒ SP = 1680

Thus, total SP = 1680 + (1680 + 90) = 3450

Therefore, total profit% = [(3450 - 3000) / 100] x 100

= 450 / 30 = 15%

Hence, the correct answer is Rs. 1500

Q. (3) The ratio of the speed of a boat in still water to the speed of the current is 10:1. Ratio of time taken by the boat to cover D km in downstream to the time taken by the boat to cover (D-45) km in upstream is 3:2. Then find the value of D?

1. 60 km
2. 87 km
3. 99 km
4. 108 km
5. 90 km

Answer: 3 (99 km)

Solution: Let the speed of the boat in still water and the speed of current be 10x km/hr and x km/hr respectively.

According to the question,

(D/11x) / [(D - 45) / 9x] = 3/2

⇒ 9D / 11(D - 45) = 3/2

⇒ 18D = 33(D - 45)

⇒ 15D = 1485

⇒ D = 99

Q. (4) 40 men can complete a work in 48 days. If 64 men started working and after X days 32 more men joined the work. If the remaining work is completed in 16 (2/3) days, then find the value of X?

1. 2
2. 5
3. 8
4. 4
5. 6

Answer: 2

Solution: According to the question, 40 × 48 = 64X + (96 x 50/3)

⇒ 120 = 4X + 100

⇒ 4X = 20

⇒ X = 5

Q. (5) A started a project by investing Rs. X and after 6 months, B invested Rs.4,000 more than what A had invested. At the end of the year, the ratio of the overall profit to that of B was 7 : 3. What was the value X?

1. 2000
2. 5000
3. 8000
4. 4000
5. 6000

Answer: 3 (8000)

Solution: (Profit of B) / Total Profit = 3/7

⇒ (X + 4000) x 6/ [(X x 12) + (X + 4000) x 6] = 3/7

⇒ 7X + 28000 = 9X + 12000

⇒ 2X = 16000

⇒ X = 8000

Q. (6) A container contains a mixture of milk and water in which water is 24%. 50% of the mixture is taken out in which water is 78 litres less than the milk. Find the remaining quantity of milk in that container?

1. 171 litres
2. 152 litres
3. 133 litres
4. 108 litres
5. 114 litres

Answer: 5 (114 litres)

Solution: Let the quantity of mixture be 100x litres

Therefore, the quantity of milk = 76x litres and the quantity of water = 24x litres

So, quantity of water taken = 12x litres

And, quantity of milk taken= 38x litres

Therefore, according to the question,

26x = 78

Hence, x = 3 litres

Therefore, required quantity of milk = 38 x 3 = 114 litres.

Q. (7) The perimeter of a triangle is equal to the perimeter of a rectangle. The length of the rectangle is 75% of the side of a square and the ratio of length to breadth of rectangle is 3 : 2. If the difference between the perimeter of a square and that of the rectangle is 36 cm, then find the perimeter of the triangle?

1. 60 cm
2. 48 cm
3. 72 cm
4. 80 cm
5. 96 cm

Answer: 1 (60 cm)

Solution: Let side of square be '4X' cm

So, the length of the rectangle = (4X) x ¾ = 3 cm

And, breadth of rectangle = 2X cm

Hence, according to the question,

[4× (4X)] - [2(3x + 2x)] = 36

⇒ 6X = 36

⇒ X = 6 cm

Therefore, the perimeter of the triangle = the perimeter of the rectangle = 2(18 + 12) = 60 cm

Directions Q. (8 – 12): Solve the given quadratic equations and mark the correct option based on your answer:

1. if x > y
2. if x ≥ y
3. if x < y
4. if x ≤ y
5. if x = y or no relation can be established between x and y.

Q. (8)

I. $x^2 − 14x + 45 = 0$

II. $y^2 – 18y + 72 = 0$

Answer: 4 (x ≤ y)

Solution: From equation I, $x^2 − 14x + 45 = 0$

⇒ x^2 -5x -9x + 45 = 0

⇒ x(x - 5) -9(x - 5) = 0

⇒ (x - 5) (x - 9) = 0

⇒ x = 5 or x = 9

From equation II, $y^2 – 18y + 72 = 0$

⇒ y^2 - 9y - 9y + 72 = 0

⇒ y(y - 9) - 8(y - 9) = 0

⇒ (y - 9) (y - 8) = 0

⇒ y = 9 or y = 8

Hence, x ≤ y

Q. (9)

    I. $x^2 + 7x + 12 = 0$

    II. $y^2 + 9y + 20 = 0$

Answer: 2 (x ≥ y)

Solution: From equation I, $x^2 + 7x + 12 = 0$

⇒ $x^2 + 4x + 3x + 12 = 0$

⇒ x(x + 4) + 3(x + 4) = 0

⇒ (x + 4) (x + 3) = 0

⇒ x = -4 or x = -3

From equation II, $y^2 + 9y + 20 = 0$

⇒ $y^2 + 5y + 4y + 20 = 0$

⇒ y(y + 5) + 4(y + 5) = 0

⇒ (y + 5) (y + 4) = 0

⇒ y = -5 or y = -4

Hence, x ≥ y

Q. (10)

    I. $4x^2 - 7x + 3 = 0$

    II. $7y^2 - 17y + 6 = 0$

Answer: 5 (no relation can be established between x and y)

Solution: From equation I, $4x^2 - 7x + 3 = 0$

⇒ $4x^2 - 4x - 3x + 3 = 0$

⇒ 4x(x - 1) - 3(x - 1) = 0

⇒ (4x - 3) (x - 1) = 0

⇒ x = 1 or x = ¾

From equation II, $7y^2 - 17y + 6 = 0$

⇒ $7y^2 - 14y - 3y + 6 = 0$

⇒ 7y(y - 2) - 3(y - 2) = 0

⇒ (y - 2) (7y - 3) = 0

⇒ y = 2 or y = 3/7

Hence, the relationship between x and y cannot be determined.

Q. (11)

   I. $2x^2 - 19x + 45 = 0$

   II. $2y^2 - 9y + 4 = 0$

Answer: 1 (x > y)

Solution: From equation I, $2x^2 - 19x + 45 = 0$

⇒ $2x^2 - 10x - 9x + 45 = 0$

⇒ 2x(x - 5) - 9(x - 5) = 0

⇒ (2x - 9) (x - 5) = 0

⇒ x = 9/2 or x = 5

From equation II, $2y^2 - 9y + 4 = 0$

⇒ $2y^2 - 8y - y + 4 = 0$

⇒ 2y (y - 4) - (y - 4) = 0

⇒ (2y - 1) (y - 4) = 0

⇒ y = 1/2 or y = 4

Hence, x > y

Q. (12)

   I. $x^2 = 144$

   II. $(y +12)^2 = 0$

Answer: 1 (x > y)

Solution: From equation I, $x^2 = 144$

⇒ $x^2 = (12)^2$

⇒ x = 12

From equation II, $(y +12)^2 = 0$

⇒ y + 12 = 0

⇒ y = -12
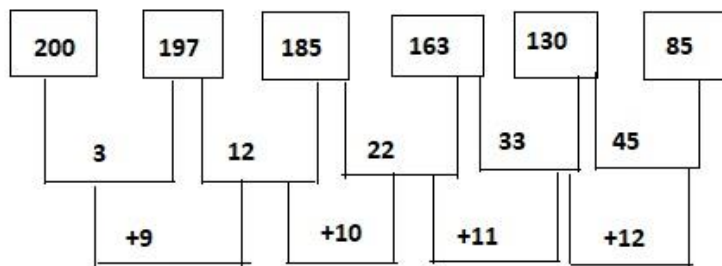
Hence, x > y

Directions Q. (13-17): What will come in place of **(?)** in the following number series?

Q. (13) 200, 197, 185, 163, 130, (?)

    1. 95

    2. 85

    3. 105

    4. 86

    5. 84

Answer: 2 (85)

Solution:

Q. (14) 15, 8, 9, 15, 32, (?)

    1. 98

    2. 66

    3. 80.5

    4. 82.5

    5. 84.5

Answer: 4 (82.5)

Solution: The pattern of the given series is as follows:

- (15 x 0.5) + 0.5 = 8
- (8 x 1) + 1 = 9
- (9 x 1.5) + 1.5 = 15
- (15 x 2) + 2 = 32
- (32 x 2.5) + 2.5 = 82.5

Q. (15) 5, 30, 150, 600, (?)

1. 1200
2. 1500
3. 2400
4. 1800
5. 600

Answer: 4 (1800)

Solution: The pattern of the given series is as follows:
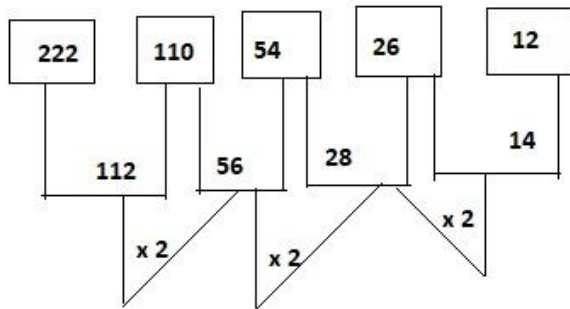
- 5 x 6 = 30
- 30 x 5 = 150
- 150 x 4 = 600

Therefore, the required number = 600 x 3 = 1800

Q. (16) 222, 110, 54, 26, (?)

1. 10
2. 12
3. 8
4. 6
5. 14

Answer: 5 (14)
Solution:

Q. (17) 104, (?), 96, 120, 88, 128

1. 112
2. 96
3. 116
4. 120
5. 92

Answer: 1 (112)

Solution: The pattern of the given series is:

- 96 - 120 = -24
- 120 - 88 = 32
- 88 - 128 = - 40

Hence, the required number = 96 + 16 = 112

Q. (18) A invested Rs. X in a scheme. After 6 months, B joined with Rs.4000 more than that of A. After a year, the ratio of profit of B to the total profit was 3: 7. Find the value of X.

1. 4000
2. 8000
3. 1600
4. 6000
5. 10000

Answer: 2 (8000)

Solution: According to the question,

(Profit of B) / (Total profit) = 3/7

⇒ [(X + 4000) x 6] / [(X x 12) + {(X + 4000) x 6}] = 3/7

⇒ (6X + 24000) / (12X + 6X + 24000) = 3/7

⇒ 42X + 168000 = 54X + 72000

⇒ 96000 = 12X

⇒ X = 8000

Q. (19) 1500 rupees is invested in a scheme A at R% p.a. simple interest. Another amount (1500 - x) is invested in scheme B at 2R % p.a. simple interest. After 4 years, interest earned from scheme A is 25% less than that of scheme B. Find x.

1. 500
2. 600
3. 900
4. 1000
5. 1200

Answer: 1

Solution: Interest earned from scheme A = (1500 x R x 4) / 100 = 60R

Interest earned from scheme B = [(1500 - X) x 2R x 4] / 100 = [2R (1500 - X)] / 25

Therefore, according to the question,

60R = ¾ x [2R (1500 - X)] / 25

⇒ 1500 - X = 1000

⇒ X = 500

Q. (20) If the perimeter of the base of a cylinder is 66 cm. Then find the volume of the cylinder if the height of the cylinder is 0.04 m.
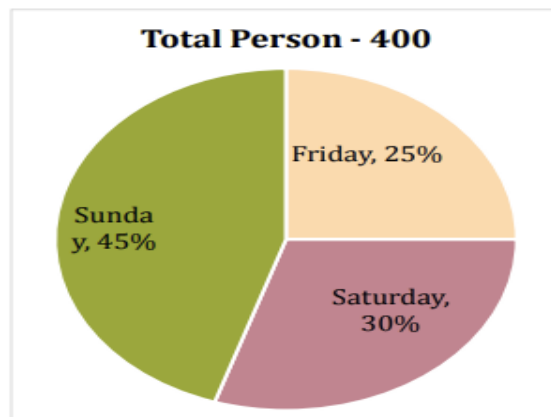
1. 1111 cm^3
2. 1386 cm^3
3. 2046 cm^3
4. 1186 cm^3

5. 2002 cm³

Answer: 2 (1386 cm³)

Solution: Radius of base of cylinder = (66/2) ÷ (22/7) = 21/2

Volume of cylinder = (22/7) x (21/2) x (21/2) x 4 = 1386 cm³

Directions Q. (21 - 25): Given below is a pie chart which shows the number of persons visiting a national park on different days and table shows the ratio of male to female visiting these parks.

Total Person - 400

Days	Male : Female
Friday	2 : 3
Saturday	5 : 7
Sunday	5 : 4

Q. (21) If on Monday the number of males who visited the national park are increased by 20% over males visiting the national park on Saturday and Females visiting the national park on Monday is 33 1/3 % more than females visiting on Friday then, find the total persons visiting the national park on Monday.

1. 145
2. 165
3. 140
4. 160
5. 150

Answer: 3

Solution:

  Total Males visiting national park on Monday = [(30/100) x 400] x [400 x (5/12)] x (120/100)

  = 120 x (5/12) x (6/5) = 60

Total females visiting national park on Monday = [(25/100) x 400] x ⅗ x (4/3) = 80

Therefore, required sum = 80 + 60 = 140

Q. (22) Total females visiting the national park on Sunday and Saturday together are what percent more or less than total male visiting the national park on Friday and Sunday together.

1. 33 1/3 %
2. 14 2/7 %
3. 16 2/3 %
4. 14 1/7 %
5. 7 1/7 %

Answer: 5

Solution: Total female visiting national park on Sunday and Saturday together

 = [(30/100) × 400] × (7/12) + [(45/100) × 400] × (4/9)

 = 70 + 80 = 150

Total male visiting national park on Friday and Sunday together

= [(25/100) × 400] × (2/5) + [(45/100) × 400] × (5/9)

= 40 + 100= 140

Required percentage = [(150 – 140)/140] × 100 = 7 1/7 %

Q. (23) What is the average of males visiting the national park on all these days?

1. 63 ⅓
2. 65 ⅔
3. 49 ⅔
4. 45 ⅓
5. 66 ⅔

Answer: 1

Solution: Required average = (40 + 50 + 100)/3 = 190/3 = 63 ⅓

Q. (24) If the cost of ticket per male and per female on any day is Rs 45 and Rs 40 respectively then total amount obtained by national park on Friday is how much more or less than total amount obtained by national park on Sunday (in Rs).

1. 2800
2. 3500
3. 3000
4. 3200
5. 4200

Answer: 2

Solution: Total amount obtained on Friday = (40 × 45) + (60 × 40)

= 1800 + 2400

 = Rs. 4200

Total amount obtained on Sunday = (100 × 45) + (40 × 80)

= 4500 + 3200 = Rs. 7700

Hence, required difference = 7700 – 4200 = Rs. 3500

Q. (25) What is the ratio of males visiting the park on Friday to females visiting the park on Saturday?

1. 4 : 5
2. 7 : 3
3. 3 : 7
4. 4 : 7
5. 7 : 4

Answer: 4

Solution: Required ratio = 40 : 70 = 4 : 7

Directions Q. (26 - 30): Study the bar-graph given below carefully and answer the questions. Bar-graph given below shows the number of packets of flour sold by five stores of two types i.e. multigrain and whole-wheat.
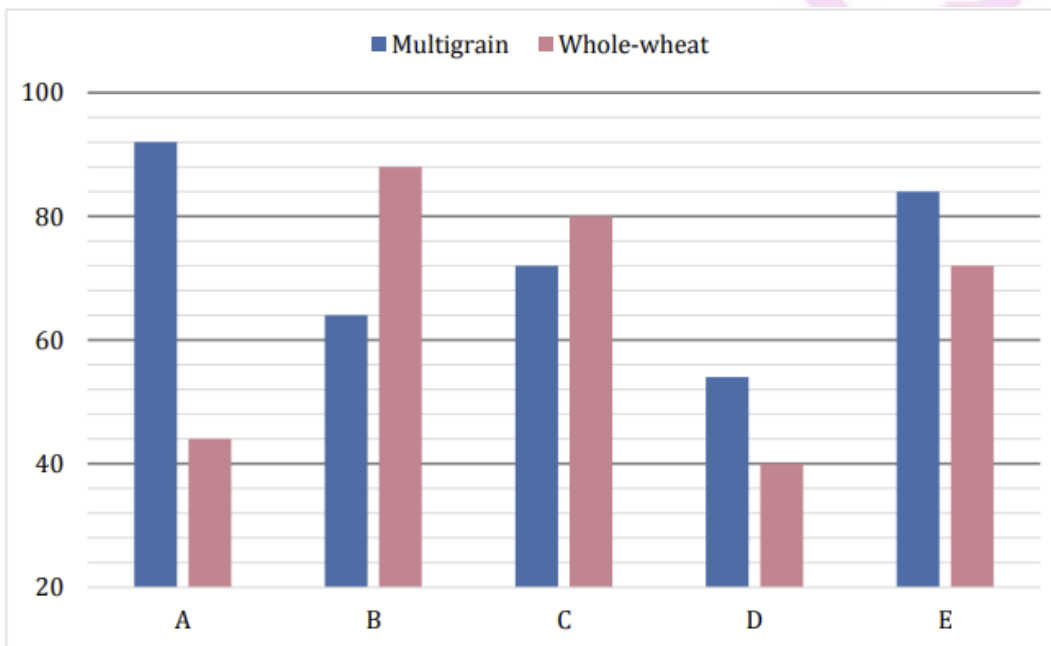
Q. (26) Total number of packets sold by store C is approximately what percent more or less than the number of packets sold by store E?

1. 3%
2. 5%
3. 12%
4. 23%
5. 17%

Answer: 1

Solution: Required % = [{(84 + 72) - (72 + 80)} / (72 + 84)] x 100

= [(156 - 152) / 156] x 100

= 2.77

= 3% (approx.)

Q. (27) What is the ratio of the number of packets sold of multigrain by store A and D together to the number of packets sold of whole-wheat by store A and E together?

1. 2 : 1
2. 73 : 58
3. 43 : 41
4. 41 : 23
5. None of these

Answer: 2

Solution: Required ratio = (92 + 54)/(44 + 72) = 73 : 58

Q. (28) Multigrain packets sold by store A and B together is what percent more or less than Whole-wheat packets sold by store C and D together?

1. 25%
2. 20%
3. 30%
4. None of these
5. 35%

Answer: 3

Solution: Required % = [{(92 + 64)–(80 + 40)}/(80 + 40)] × 100

= 30%

Q. (29) If another store F sold number of multigrain packets which is average of number of multigrain packets sold by store C, D and E and number of whole-wheat packets sold is average of number of

wholewheat packets sold by store A and E. If store B sold each packet at Rs 240 and store F sold each packet at 20% more than that of B then find total price collected by store F?

1. Rs 24246
2. Rs 28246
3. Rs 36864
4. Rs 32863
5. None of these

Answer: 3

Solution: No. of packets sold by store F = [1/3(72 + 54 + 84)] + [1/2(44 + 72)]

$$= 70 + 58 = 128$$

Required price = 128 × 240 × (120/100)

$$= Rs. 36864$$

Q. (30) What is the difference of the total number of multigrain packets sold by all store together and the number of whole-wheat packets sold by all store together?

1. 48
2. 54
3. 42
4. 36
5. 24

Answer:

Solution: Required difference = (92 + 64 + 72 + 54 + 84) - (44 + 88 + 80 + 40 + 72)

$$= 366 - 324$$

$$= 42$$

Directions Q. (31 - 35): Study the given information carefully and answer the question that follows.

3 pizza shops A, B and C sells veg pizza and non veg pizza. Respective ratio between number of vegetarian and non-vegetarian pizzas sold by pizza shop A was 9 : 7 and that sold by pizza shop B was 3 : 4. The no. of pizzas (Veg + non veg) sold by pizza shop C was 108 and respective ratio between number of vegetarian and non-vegetarian pizza sold by pizza shop C was 7 : 5 Total number of pizza

sold by all three pizza shop was 376. Number of veg pizza sold by pizza shop A was 20% more than the veg pizza sold by pizza shop B.

Q. (31) If the cost of each veg pizza and each non-veg pizza sold by shop B is Rs 200 and Rs 300 respectively then find the total amount obtained by shop B (in Rs).

1. 40,000
2. 36000
3. 48000
4. 32000
5. 44000

Answer: 2

Solution:

Pizzas	Shop A	Shop B	Shop C
Veg	72	60	63
Non-veg	56	80	45

Required total amount = (60 × 200) + (80 × 300) = 12000 + 24000 = 36000

Q. (32) What is the ratio of veg pizza sold by shop A & C together to the non-veg pizza sold by shop B & C together?

1. 27 : 25
2. 27 : 29
3. 29 : 27
4. 25 : 27
5. 23 : 25

Answer: 1

Solution: Required ratio = (72 + 63)/(80 + 45) = 135/125 = 27/25

Q. (33) What is the average of veg pizza sold by all shops?

1. 61
2. 68
3. 62
4. 60
5. 65

Answer: 5

Solution: Required average = (72 + 60 + 63)/3 = 65

Q. (34) Total veg pizzas sold by Shop A and C are what percent of total non-veg pizza sold by shop B & C?

1. 113%
2. 108%
3. 109%
4. 112%
5. 116%

Answer: 2

Solution: Required percentage = (135/125) × 100

= (27/25) × 100

= 108%

Q. (35) If Veg pizza sold by shop B is increased by 33 1/3 % and non-veg pizza sold by shop A is increased by 75% then what is the sum of veg pizza sold by B and non-veg pizza sold by A after increment.

1. 178
2. 186
3. 198
4. 200
5. 182

Answer: 1

Solution: Required sum = (4/3 × 60) + (7/4 × 56)

= 80 + 98

= 178