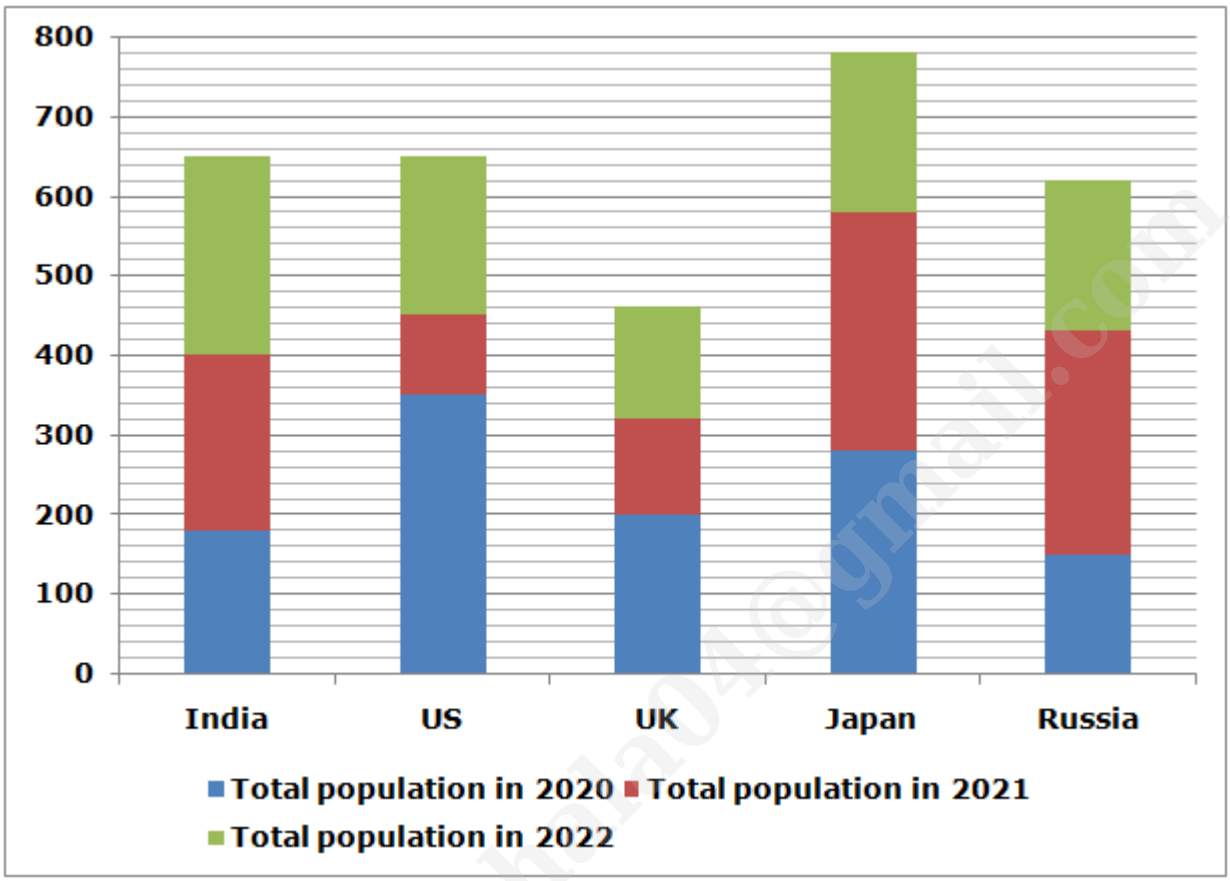
1. Questions

Study the following information carefully and answer the questions.

The given bar graph shows the total population of five different countries namely India, US, UK, Japan and Russia in three different years i.e. 2020, 2021 and 2022.



If the total population of India in 2023 is y% more than that of 2021 and the total population of India from 2020 to 2023 is 881 and the ratio of the male to female population of India in 2023 is 1:(y-3), then find the female population of India in 2023.

a. 164

b. 154

c. 144

d. 125

e. 101

2. Questions

In Japan, the ratio of the male population in 2021 to 2022 is 6:5 and the ratio of the female population in 2021 to 2022 is 2:1. If the literate population of Russia in 2022 is 65 less than the total female population of Japan in 2021 and 2022 together, then find theilliterate population of Russia in 2022.

a. 70

b. 80

c. 50

d. 90

e. 30

3. Questions

If 40% of the total population of the US in 2020 are males and the rest of them are females and the male population of the US in 2021 is 80 less than that of the previous year and the total female population of the US in all three years is 300, then find the male population of the USin 2022.

a. 180

b. 150

c. 80

d. 70

e. 100

4. Questions

The total population of the UK, Russia and the US togetherin 2020 is what percentage more than the total population of India in 2022?

a. 160%

b. 210%

c. 180%

d. 155%

e. 310%

5. Questions

Find the ratio between the total population of the UK in 2020 and 2022 together to the total population of Japan and Russia in 2021.

a. 23:52

b. 43:50

c. 17:29

d. 16:17

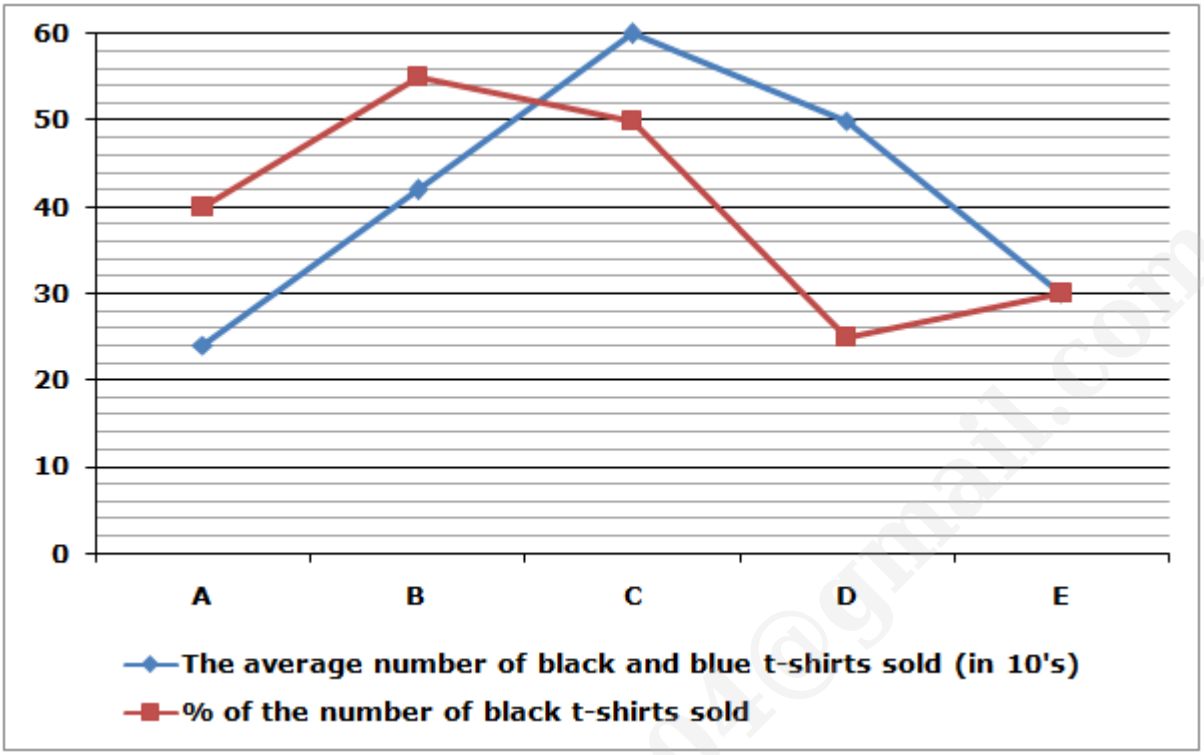
e. 31:42

6. Questions

Study the following information carefully and answer the questions.

The given line graph shows the average number of black and blue t-shirts sold in five different shops namely A, B, C, D and E and also given the percentage of the number of black t-shirts sold in these five shops.

Note: Total number of t-shirts sold = Number of black t-shirts sold + Number of blue t-shirts sold



If the total number of (black + blue) t-shirts sold in shop F is (x -5)% less than the number of black t-shirts sold in shop C and the number of black t-shirts sold in shop D andF is the same and the ratio of the number of black to blue t-shirts sold in shop F is 5:4, then find the value of x.

a. 35

b. 30

c. 50

d. 20

e. 25

7. Questions

Out of the total number of blue t-shirts sold in shops A and D, 37.5% and 60% of the t-shirtsrespectively are owned by Chotu and the remaining t-shirts are owned by Motu. If the number of black t-shirts sold in shop T is 1.5 times the total number of blue t-shirts sold in both shops A and Dare owned by Motu, then find the ratio of the number of black t-shirts sold in shop C to shop T.

a. 3:4

b. 5:6

c. 2:1

d. 7:5

e. 9:8

8. Questions

If the number of pink t-shirts sold in shops P and Q is 30% more and 108% more than the number of black t-shirts sold in shop D and the totalnumber of pink t-shirts sold in shops P and R together is 715, then find the difference between the numberof pink t-shirts sold in shops Q and R.

a. 150

b. 130

c. 220

d. 420

e. 190

9. Questions

Find the difference between the total number of blue t-shirts sold in shops C and E together and the number of black t-shirts in shop D.

a. 770

b. 450

c. 820

d. 900

e. 580

10. Questions

The total number of black t-shirts sold in shops A and B together is what percentage of the total number of t-shirts sold in shop C?

a. 87.5%

b. 60.4%

c. 75.6%

d. 35.2%

e. 54.5%

11. Questions

Following questions have two quantities as Quantity I and Quantity II. You have to determine the relationship between them and give answer as,

Quantity I: An article with a cost price of Rs. 4200 is marked 25% above its cost price and sold after

giving a discount of Rs. 250. If the profit earned on the article is equal to the marked price of the book and it is sold at a discount of 10%, then find the selling price of the book.

Quantity II: Rs. 5000 is invested in compound interest at a rate of 10% per annum for 3 years. Find 40% of the compound interest received.

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.

12. Questions

Quantity I: A man saves 40% of his income. If the difference between his expenditure and savings is Rs.27000, then find the $1/500^{th}$ of his income.

Quantity II: Mixture A contains milk and water in the ratio 7:5. If 30 litres of milk is added and 50 litres of water is taken out, then the ratio of water to milk becomes 10:19. Find the initial quantity of water in mixture A.(Compare the numerical value only)

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

13. Questions

Quantity I: Find the probability of randomly selecting a prime number from the first 100 natural numbers.

Quantity II: P is the square of the largest negative number. Q is the prime number which is less than 7 and greater than 3. Find the value of (P + Q).

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

14. Questions

Quantity I: Perimeter of the rectangle is 108 cm and the ratio of the length to breadth of the rectangle is

5: 4. What is area of the rectangle?

Quantity II: Length of the rectangle is 8 cm more than the breadth of the rectangle and the perimeter of the rectangle is 20 cm less the circumference of the circle whose radius is 14 cm. What is the area of the rectangle?

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

15. Questions

Quantity I: A alone can build a wall in 6 hours. A and B together can build the wall in 2 hours. The ratio of the efficiency of C to B is 2:1. Find the time taken by C alone to build the wall.

Quantity II: 4 hours

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

16. Questions

A invested Rs.x in simple interest at 25% per annumfor 4 years and invested Rs.(x+500) in compound interest at 40%per annum for one year compounded half-yearly. The total interest received by him is Rs.508. If he invested Rs.5x in simple interest at 10% per annum, then find the interest receivedby him after 3 years.

a. Rs. 500
b. Rs. 350
c. Rs. 300
d. Rs. 600
e. Rs. 240

17. Questions

A started a business with an investment of Rs.4000. After 1.5 years, A withdraws Rs.1500. B joined the business 4 months later from the start of the business with an investment of 2/5th of A's initial investment.At the end of two years, the total profit of the business is Rs.29750. Find the profit share

of A.

a. Rs. 8000

b. Rs. 22750

c. Rs. 7000

d. Rs. 21750

e. Rs. 21450

18. Questions

A, B and C alone can do a piece of work in 140 days, 112 days and 80 days respectively. All of them started working together. After 10 days, A left the work and 16 days before the completion of the work, C also left. For how many days did only B and C work together?

a. 20.5 days

b. 26.67 days

c. 48.88 days

d. 30.5 days

e. 35.66 days

19. Questions

Average weight of 30 students is 27 kg and when the weight of two teachers is included, the average weight increases by 3 kg. If the weight of one teacher is 40 kg more than the other teacher and the sum of the weight of the teacher with heavy weight and the total weight of the girl students is 455 kg, then find the number of boys in the class and the average of the girl students is 30 kg.

a. 12

b. 14

c. 11

d. 18

e. None of these

20. Questions

Raj bought a bike for Rs. 1800 andspend some amount on its maintenance. He then marked it up by 10% and sold it to Ravi at a discount of 10%. Ravi spend the same amount on its repairs as Raj spendon its maintenance and sold it for Rs. 3332.4 at a profit of 20%. Find the amount spendon maintenance.

a. Rs. 800

b. Rs. 500

c. Rs. 450

d. Rs. 400

e. Rs. 720

21. Questions

The speed of the stream is 25% of the speed of the boat in still water. The boat covers 510 km in downstream in 10.2 hours. If the speed of the stream is increased by 50%, then find the time taken by the boat to cover 450 km in upstream.

a. 15 hours

b. 18 hours

c. 22 hours

d. 17 hours

e. 28 hours

22. Questions

The ratio of the present ages of A to B is 4:7. The ratio of A's age after 7 years to B's age before 7 years is 5:6. The present average age of A, B, and C is 32 years. If the present age of D is 20 years more than the present age of C, then find the present age of D.

a. 20 years

b. 28 years

c. 39 years

d. 25 years

e. 26 years

23. Questions

A fraction is such that, if the numerator is multiplied by 5 and the denominator is tripled and the numerator is increased by 20% and the denominator is decreased by 40%, then the fraction becomes (4/3). If the original fraction is multiplied by 25 and then added to the square of 6, then find the value of the fraction.

a. 31

b. 46

c. 45

d. 54

e. 29

24. Questions

Trains A and B are running in the same direction at speeds of 108 km/hr and 72 km/hr, respectively. The longer train overtakes the shorter train in 35 seconds and the length of one train is 150 metres more than the length of the other train. Find the length of the longer train.

a. 200 metres

b. 250 metres

c. 240 metres

d. 180 metres

e. 160 metres

25. Questions

The income of Arun in January is Rs. 40000, which is 20% less than that of February. For each month, he spends 20% of his income on food, 25% on clothing and rent, and saves the rest. Find the total savings of Arun in both months.

a. Rs. 48500

b. Rs. 49500

c. Rs. 45000

d. Rs. 34500

e. Rs. 39000

26. Questions

What value should come in the place of (?) in the following questions?

$8000/\sqrt{625} + 16^2 = 560 - 12^2 + ?$

a. 200

b. 160

c. 145

d. 140

e. 196

27. Questions

$20*? + 18 * 7 = 30 * 12 + \sqrt{400}$

a. 16.7

b. 15.8

c. 12.7

d. 10.8

e. 15

28. Questions

$(? + 250)/(8)^{1/3} = 45\%$ of $1800 - (27)^{1/3}$

a. 1245

b. 1364

c. 1600

d. 1296

e. 1900

29. Questions

75% of $480 + 10^2 = 5 * ? + 76 * \sqrt[3]{125}$

a. 14

b. 16

c. 25

d. 28

e. 20

30. Questions

$\sqrt{(? + 30^2)} = 32 + 176/44 + 234/18$

a. 1924

b. 700

c. 1501

d. 1600

e. 469

31. Questions

What value should come in the place of (?) in the following number series?

24, 144, ?, 180, 15

a. 25

b. 16

c. 18

d. 20

e. 30

32. Questions

429, 472, ?, 564, 613

a. 524

b. 517

c. 488

d. 489

e. 512

33. Questions

12, 17, ?, 36, 50

a. 23

b. 25

c. 28

d. 33

e. 21

34. Questions

336, 840, 1680, 2520, ?

a. 2520

b. 2805

c. 2405

d. 2755

e. 3425

35. Questions

17, 54, 219, ?, 2643

a. 421

b. 660

c. 345

d. 320

e. 280

36. Questions

Following question contains two equations as I and II. You have to solve both equations and determine the relationship between them and give answer as,

i). $4x^2 - 65x + 204 = 0$

ii). $y^2 - 25y + 156 = 0$

a. $x > y$

b. $x \geq y$

c. $x = y$ or relationship can't be determined

d. $x < y$

e. $x \leq y$

37. Questions

i). $2x^2 - 41x + 204 = 0$

ii). $2y^2 - 29y + 102 = 0$

a. $x > y$

b. $x \geq y$

c. $x = y$ or relationship can't be determined

d. $x < y$

e. $x \leq y$

38. Questions

i). $x^2 - 2x - 224 = 0$

ii). $y^2 - 9y - 360 = 0$

a. $x > y$

b. $x \geq y$

c. $x = y$ or relationship can't be determined

d. $x < y$

e. $x \leq y$

39. Questions

i). $3x^2 - 11x - 20 = 0$

ii). $7y^2 - 41y + 30 = 0$

a. $x > y$

b. $x \geq y$

c. $x = y$ or relationship can't be determined.

d. $x < y$

e. $x \leq y$

40. Questions

i). $x^2 + 19x + 34 = 0$

ii). $y^2 + 21x + 38 = 0$

a. $x > y$

b. $x \geq y$

c. $x = y$ or relationship can't be determined

d. $x < y$

e. $x \leq y$

Explanations:

1. Questions

Countries	The total population in 2020	The total population in 2021	The total population in 2022
India	180	220	250
US	350	100	200
UK	200	120	140
Japan	280	300	200
Russia	150	280	190

Answer: B

The total population of India in 2023 =881 – (180 + 220 + 250) = 881 – 650 = 231

220 *(100+y)/100 = 231

220 + 2.2y = 231

2.2y = 11

y = 5

The ratio of the male to female population of India in 2023 = 1:(y-3) = 1:(5-3) = 1:2

The female population of India in 2023 = 231 * 2/(1 + 2) =231 * 2/3 = 154

2. Questions

Countries	The total population in 2020	The total population in 2021	The total population in 2022
India	180	220	250
US	350	100	200
UK	200	120	140
Japan	280	300	200
Russia	150	280	190

Answer: E

Let the male population of Japan in 2021 and 2022 be 6x and 5x respectively.

Let the female population of Japan in 2021 and 2022 be 2y and y respectively.

6x + 2y = 300 ------>(1)

5x + y = 200 -------->(2)

By solving equation (1) and (2), we get

x = 25, y = 75

The total female population of Japan in 2021 and 2022 together = (2y + y) = 3 * 75 = 225

The literate population of Russia in 2022 = 225 – 65 = 160

The illiterate population of Russia in 2022 = 190 – 160 = 30

3. Questions

Countries	The total population in 2020	The total population in 2021	The total population in 2022
India	180	220	250
US	350	100	200
UK	200	120	140
Japan	280	300	200
Russia	150	280	190

Answer: B

The total population of the US in 2020 = 350

The male population of the US in 2020 = 350 * 40/100 = 140

The female population of the US in 2020 = 350 – 140 = 210

The male population of the US in 2021 = 140 – 80 = 60

The female population of the US in 2021 = 100 – 60 = 40

The female population of the US in 2022 = 300 – (210 + 40) = 300 - 250 = 50

The male population of the US in 2022 = 200 – 50 = 150

4. Questions

Countries	The total population in 2020	The total population in 2021	The total population in 2022
India	180	220	250
US	350	100	200
UK	200	120	140
Japan	280	300	200
Russia	150	280	190

Answer: C

The total population of the UK, Russia and the US together in 2020 = 150 + 200 + 350 = 700

Required % = (700 – 250)/250 * 100 = 450/250 * 100 = 180%

5. Questions

Countries	The total population in 2020	The total population in 2021	The total population in 2022
India	180	220	250
US	350	100	200
UK	200	120	140
Japan	280	300	200
Russia	150	280	190

Answer: C

The total population of UK in 2020 and 2022 together = 200 + 140 = 340

The total population of Japan and Russia together in 2021 = 300 + 280 = 580

Required ratio = 340:580 = 17:29

6. Questions

The total number of t-shirts sold in shop A = 240 * 2 = 480

The number of black t-shirts sold in shop A = 480 * 40/100 = 192

The number of blue t-shirts sold in shop A = 480 * 60/100 = 288

Similarly,

Shop	The total number of t-shirts sold	The number of black t-shirts sold	The number of blue t-shirts sold
A	480	192	288
B	840	462	378
C	1200	600	600
D	1000	250	750
E	600	180	420

Answer: B

The number of black t-shirts sold in shop F = 250

The number of blue t-shirts sold in shop F = 250 * 4/5 = 200

The total number of t-shirts sold in shop F = (250 + 200) = 450

600 * (100 – (x – 5))/100 = 450

600 * (100 –x +5)/100 = 450

105 – x = 75

x = 30

7. Questions

The total number of t-shirts sold in shop A = 240 * 2 = 480

The number of black t-shirts sold in shop A = 480 * 40/100 = 192

The number of blue t-shirts sold in shop A = 480 * 60/100 = 288

Similarly,

Shop	The total number of t-shirts sold	The number of black t-shirts sold	The number of blue t-shirts sold
A	480	192	288
B	840	462	378
C	1200	600	600
D	1000	250	750
E	600	180	420

Answer: B

The number of blue t-shirts owned by Motu in shop A = 288 * (100 – 37.5)/100 = 288 * 5/8 = 180

The number of blue t-shirts owned by Motu in shop D = 750 * (100 – 60)/100 = 750 * 40/100 = 300

The sum of the number of blue t-shirts owned by Motu in both shops A and D = 180 + 300 = 480

The number of black t-shirts sold in shop T = 480 * 1.5 = 720

Required ratio = 600:720 = 5:6

8. Questions

The total number of t-shirts sold in shop A = 240 * 2 = 480

The number of black t-shirts sold in shop A = 480 * 40/100 = 192

The number of blue t-shirts sold in shop A = 480 * 60/100 = 288

Similarly,

Shop	The total number of t-shirts sold	The number of black t-shirts sold	The number of blue t-shirts sold
A	480	192	288
B	840	462	378
C	1200	600	600
D	1000	250	750
E	600	180	420

Answer: B

The number of pink t-shirts sold in shop P = 250 * 130/100 = 325

The number of pink t-shirts sold in shop Q = 250 * 208/100 = 520

The number of pink t-shirts sold in shop R = 715 - 325 = 390

Required difference = 520 – 390 = 130

9. Questions

The total number of t-shirts sold in shop A = 240 * 2 = 480

The number of black t-shirts sold in shop A = 480 * 40/100 = 192

The number of blue t-shirts sold in shop A = 480 * 60/100 = 288

Similarly,

Shop	The total number of t-shirts sold	The number of black t-shirts sold	The number of blue t-shirts sold
A	480	192	288
B	840	462	378
C	1200	600	600
D	1000	250	750
E	600	180	420

Answer: A

The total number of blue t-shirts in shops C and E together = 600 + 420 = 1020

Required difference = 1020 – 250 = 770

10. Questions

The total number of t-shirts sold in shop A = 240 * 2 = 480

The number of black t-shirts sold in shop A = 480 * 40/100 = 192

The number of blue t-shirts sold in shop A = 480 * 60/100 = 288

Similarly,

Shop	The total number of t-shirts sold	The number of black t-shirts sold	The number of blue t-shirts sold
A	480	192	288
B	840	462	378
C	1200	600	600
D	1000	250	750
E	600	180	420

Answer: E

The total number of black t-shirts sold in shops A and B together = 192 + 462 = 654

Required percentage = 654/1200 * 100 = 54.5%

11. Questions

Answer: A

Quantity I:

The selling price of the article = 4200 * 125/100 – 250 = Rs. 5000

The profit earned the article= 5000 – 4200 = Rs. 800

The selling price of the book= 800 * 90/100 = Rs. 720

Quantity II:

$CI = P(1+R/100)^n – P$

$CI = 5000 * (1 + 10/100)^2 - 5000$

CI = 5000 * 1.1 * 1.1 * 1.1 – 5000

CI = 1655

40% of the interest = 1655 * 40/100 = Rs.662

Hence, quantity I > quantity II

12. Questions

Answer: A

Quantity I:

Let, the income of the man = 100x

The saving of the man = 100x * 40/100 = 40x

The expenditure of the man = 100x – 40x = 60x

60x – 40x = 27000

20x = 27000

x = 1350

The income of the man = 1350 * 100 = Rs.135000

Required solution = 135000 * 1/500 = Rs. 270

Quantity II:

The initial quantity of milk in the mixture = 7a

The initial quantity of water in the mixture = 5a

(7a +30)/(5a – 50) = 19/10

70a + 300 = 95a – 950

25a = 1250

a = 50

The initial quantity of water in the mixture = 50 * 5 = 250 litres

Quantity I > Quantity II

13. Questions

Answer: C

Quantity I:

Between 1 and 100, there are 25 prime numbers

Required probability = 25/100 = (1/4)

Quantity I = 0.25

Quantity II:

Largest negative number = -1

$P = (-1)^2 = 1$

Q (Prime number which is less than 7 and more than 3) = 5

Required solution = 1+5 = 6

Quantity I < Quantity II

14. Questions

Answer: E

From quantity I,

Perimeter of the rectangle = 2 * (l + b)

108 = 2 * (9x)

x = 6 cm

Area of the rectangle = 30 * 24 = 720 cm^2

From quantity II,

Circumference of the circle = 2 * 22/7 * 14 = 88 cm

Perimeter of the rectangle = 88 – 20 = 68 cm

2 * (b + 8 + b) = 68

2b = 26

b = 13 cm

Length of the rectangle = 13 + 8 = 21 cm

Area of the rectangle = 13 * 21 = 273 cm^2

Quantity I > Quantity II

15. Questions

Answer: C

Quantity I:

The total work (LCM of 6, 2) = 6 units

The efficiency of A = 6/6 = 1 units

The efficiency of A and B together = 6/2 = 3 units

The efficiency of B = 3 - 1 = 2 units

The efficiency of C = 2 * 2/1 = 4 units

Time taken by C alone to build the wall = 6/4 = 1.5 hours

Quantity II: 4 hours

Quantity I < Quantity II

16. Questions

Answer: C

According to the question,

SI = PNR/100

$CI = P[(1+(R/2))/100]^T - P$

$(x * 25 * 4/100) + (x + 500)[(1 + (40/2))/100]^{(1 * 2)} - (x+500) = 508$

$100x/100 + (x + 500) * (120/100)^2 - (x + 500) = 508$

$x + (x + 500) * 1.44 - x - 500 = 508$

$x + 1.44x + 720 - x - 500 = 508$

$1.44x + 220 = 508$

$x = 200$

$5x = 200 * 5 = 1000$

$SI = 1000 * 10 * 3/100 = 300$

Required SI = Rs.300

17. Questions

Answer: D

According to the question,

The ratio of theprofit share of A to B = $(4000 * 18 + (4000 - 1500) * 6):(1600 * 20)$

$= (4000 * 18 + 2500 * 6) : (1600 * 20)$

$= (720 + 150) : 320$

$= 870:320$

$= 87:32$

The profit share of A = $29750 * 87/(87 + 32) = 29750 * 87/119$ = Rs. 21750

18. Questions

Answer: B

According to the question,

Let, the total work = 560 units

A alone can do a work = 560/140 = 4 units/day

B alone can do a work = 560/112 = 5 units/day

C alone can do a work = 560/80 = 7 units/day

Amount of work done by A, B and C together in 10 days = 10 * (4+5+7) = 160 units

Amount of work done by B alone in 16 days = 16 * 5 =80 units

Remaining work = 560 – 160 – 80 = 320 units

Time taken by B and C together to complete = 320/12 = 26.67 days

19. Questions

Answer: D

Weight of the teacher with lowest weight = x kg

Weight of the teacher with heavy weight = (x + 40) kg

(27 * 30 + x + x + 40)/32 = 27 + 3

(850 + 2x)/32 = 30

2x = 960 – 850

x = 55 kg

Weight of the teacher with heavy weight = 55 + 40 = 95 kg

Total weight of the girl students = 455 – 95 = 360 kg

Let number of girls be a

a * 30 = 360

a = 12

Number of boys in the class = 30 – 12 = 18

20. Questions

Answer: B

According to the question,

Let the amount spend by Raj on bike maintenance be Rs. x.

The total cost price of the cycle = Rs. (1800 + x)

The selling price of bike by Raj = (1800+x) * 110/100 * 90/100 = Rs. (1782 + 0.99x)

((1782 + 0.99x) + x) * 120/100 = 3332.4

1782 + 1.99x = 3332.4 * 100/120

1.99x = 2777 - 1782

x = 500

The amount spend on bike maintenance = Rs. 500

21. Questions

Answer: B

According to the question,

Let, the speed of the boat in still water= x km/hr

The speed of the water = x * 25/100 = 0.25x km/hr

The downstream speed = (x+0.25x) = 1.25x

510/10.2 = 1.25x

50 = 1.25x

x = 40

The speed of the boat in still water= 40 km/hr

The speed of the stream = 40 * 25/100 = 10 km/hr

After increased,

The speed of the stream = 10 * 150/100 = 15 km/hr

Time taken = 450/(40 – 15) =450/25 = 18 hours

22. Questions

Answer: C

According to the question,

Let, the present age of A = 4x

The present age of B = 7x

(4x + 7)/(7x -7) = 5/6

24x + 42 = 35x – 35

11x = 77

x = 7

The present age of A = 4 * 7 = 28 years

The present age of B = 7 * 7 = 49 years

The present age of C = 32 * 3 – (28 + 49) =96 – 77 =19 years

The present age of D = 19 + 20 = 39 years

23. Questions

Answer: B

According to the question,

Let the original fraction be (x/y).

(5x*120/100)/(3y*60/100) = 4/3

6x/1.8y = 4/3

18x = 7.2y

x/y = 2/5

Required value of the fraction = 2/5 * 25 + 36 = 46

24. Questions

Answer: B

According to the question,

Let, the length of the shorter train be x metres,

So, the length of the longer train = (x+150) metres

The speed of the train A = 108 * 5/18 = 30 m/s

The speed of the train B = 72 * 5/18 = 20 m/s

(x+x+150)/(30-20) = 35

2x + 150 = 350

2x = 200

x =100

The length of the longer train = 100 + 150 = 250 metres

25. Questions

Answer: B

According to the question,

The income of Arun in January = Rs. 40000

The income of Arun in February = 40000 * 100/80 = Rs. 50000

The saving of Arun in January = 40000 * (100 – 20 – 25)/100 = 40000 * 55/100 = Rs. 22000

The saving of Arun in February = 50000 * (100 – 20 – 25)/100 = 50000 * 55/100 = Rs. 27500

Required total = 22000 + 27500 = Rs. 49500

26. Questions

Answer: B

$8000 /\sqrt{625} + 16^2 = 560 – 12^2 + ?$

8000/25 + 256 = 560 – 144 + ?

320 + 256 = 416 + ?

576 – 416 = ?

? = 160

27. Questions

Answer: C

20 * ? + 18 * 7 = 30 * 12 + √400

20 * ? = 380 -126

20 * ? = 254

? = 12.7

28. Questions

Answer: B

$(? + 250) / (8)^{1/3} = 45\%$ of $1800 – 27^{1/3}$

$(? + 250)/2 = 810 – 3$

$? + 250 = 1614$

$? = 1364$

29. Questions

Answer: B

75% of $480 + 10^2 = 5 * ? + 76 * \sqrt[3]{125}$

$360 + 100 = 5 * ? + 380$

$460 – 380 = 5 * ?$

$80 = 5 * ?$

$? = 16$

30. Questions

Answer: C

$\sqrt{(? + 30^2)} = 32 + 176/44 + 234/18$

$\sqrt{(? + 900)} = 32 + 4 + 13$

$\sqrt{(? + 900)} = 49$

$? = 2401 – 900 = 1501$

31. Questions

Answer: C

$24 * 6 = 144$

$144/8 =$ **18**

$18 * 10 = 180$

$180/12 = 15$

32. Questions

Answer: B

$21^2 – 12 = 429$

$22^2 – 12 = 472$

$23^2 - 12 =$ **517**

$24^2 - 12 = 564$

$25^2 - 12 = 613$

33. Questions

Answer: B

12 + 5 = 17

17 + 8 = **25**

25 + 11 = 36

36 + 14 = 50

34. Questions

Answer: A

336 * 2.5 = 840

840 * 2 = 1680

1680 * 1.5 = 2520

2520 * 1 = **2520**

35. Questions

Answer: B

17 * 3 + 3 = 54

54 * 4 + 3 = 219

219 * 3 + 3 = **660**

660 * 4 + 3 = 2643

36. Questions

Answer: E

$4x^2 - 65x + 204 = 0$

$4x^2 - 48x - 17x + 204 = 0$

$4x(x - 12) - 17(x - 12) = 0$

$x = +12, +4.25$

$y^2 - 25y + 156 = 0$

$y^2 - 12y - 13y + 156 = 0$

(y -12) (y -13) =0

y = +12, +13

Hence, x ≤ y

37. Questions

Answer: B

$2x^2$ -41x + 204 =0

$2x^2$ – 24x – 17x + 204 =0

(x -12) (2x – 17) =0

x = +12, +8.5

$2y^2$ – 29y + 102 =0

$2y^2$ – 12y – 17y + 102 =0

(y -6) (2y – 17) =0

y = +6, +8.5

Hence, x ≥ y

38. Questions

Answer: C

x^2 - 2x – 224 = 0

x^2 – 16x + 14x – 224 =0

(x – 16) (x + 14) =0

x = +16, -14

y^2 - 9y – 360 = 0

y^2 – 24y + 15y – 360 =0

(y -24) (y + 15) =0

y = +24, -15

Hence, x = y or relationship cannot be determined.

39. Questions

Answer: C

$3x^2$ - 11x - 20 = 0

$3x^2$ – 15x + 4x -20 =0

$3x(x - 5) + 4(x - 5) = 0$

$(3x + 4)(x - 5) = 0$

$x = -1.33, +5$

$7y^2 - 41y + 30 = 0$

$7y^2 - 35y - 6y + 30 = 0$

$7y(y - 5) - 6(y - 5) = 0$

$(y - 5)(7y - 6) = 0$

$y = +5, +0.85$

Hence, x = y or relationship can't be determined.

40. Questions

Answer: C

$x^2 + 19x + 34 = 0$

$x^2 + 17x + 2x + 34 = 0$

$(x + 17)(x + 2) = 0$

$x = -17, -2$

$y^2 + 21x + 38 = 0$

$y^2 + 19x + 2x + 38 = 0$

$(y + 19)(y + 2) = 0$

$y = -19, -2$

Hence, x = y or relationship cannot be determined.