MATH PAPER TEST 7}

Q1. The following numbers form a series. Find the odd one out.
24, 33, 49, 73, 110, 159
A.24 B.73 C.33 D.49 E.110

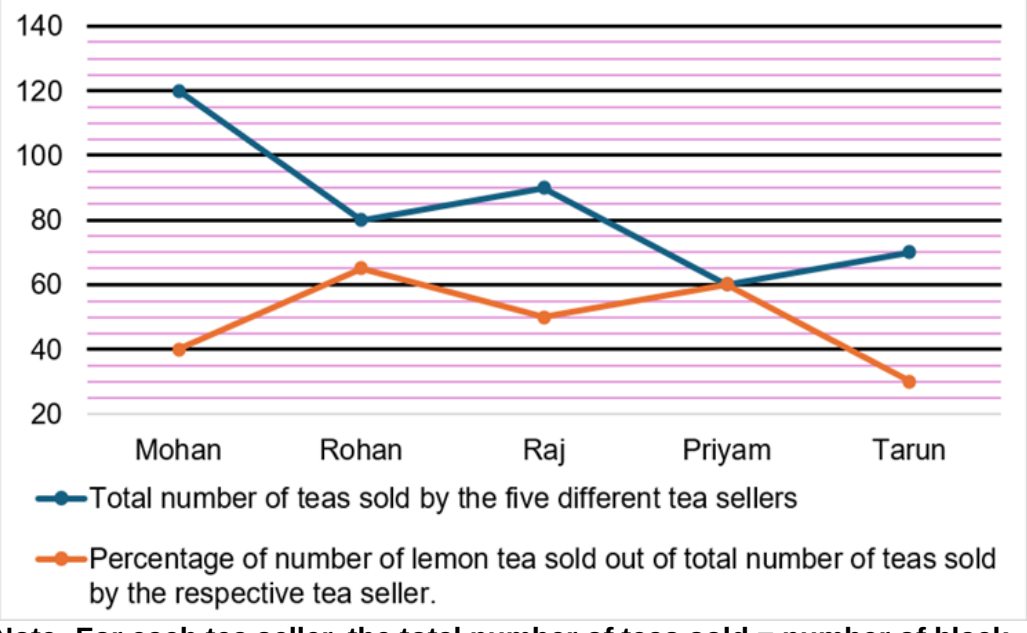
Q2. The following numbers form a series. Find the odd one out.
13, 17, 25, 47, 73, 137
A.47 B.13 C.17 D.25 E..137

Q3. The following numbers form a series. Find the odd one out.
421, 423, 429, 436, 445, 456
A.421 B.423 C.429 D.436 E.445

Q4. The following numbers form a series. Find the odd one out.
8, 6, 8, 18, 30, 77
A.6 B.18 C.77 D.30 E.8

Q5. The following numbers form a series. Find the odd one out.
5, 24, 61, 123, 213, 340
A.61 B.123 C.5 D.24 E.213

Directions [Set of 6 Questions]: Answer the questions based on the information given below.
The line graph given below shows the total number of teas sold by the five different tea sellers on a certain day and the percentage of lemon tea sold out of the total number of teas sold by the respective tea seller.



Note: For each tea seller, the total number of teas sold = number of black teas sold + number of lemon teas sold

Q6. Find the ratio between the number of lemon teas sold by Mohan to the number of black teas sold by Rohan.
A.4:11 B.11:4 C.7:12 D.12:7 E.5:12

Q7.If the price of lemon tea and black tea is Rs. 15 and Rs. 12, respectively, then find the amount generated by selling the teas by Priyam.
A.Rs. 748 B.Rs. 628 C.Rs. 728 D.Rs. 828 E.Rs. 722

Q8.Out of the total number of lemon teas and black teas sold by Raj, 20% and 11 19% respectively are sold to females. Find the total number of teas sold to males by Raj.
A.56 B.76 C.54 D.78 E.64

Q9.The total number of lemon teas sold by Mohan and Rohan is what percent of the total number of teas sold by Raj and Priyam?
a. 50% b. 25% c. 33 13% d. 66 23% e. 60%

Q10.The total number of teas sold by Varun is 16 23% more than that by Priyam. If the number of lemon teas sold by Varun is 12.5% more than that by Mohan, then find the difference between the black teas sold by Varun and Tarun.
A.43 B.23 C.33 D.15 E.31

Q11.Find the average number of black teas sold by Mohan, Raj and Priyam.
A.42 B.37 C.67 D.47 E.52

Q12.A bag contains 8 red balls, 7 black balls and 5 blue balls. If two balls are drawn at random without replacement from the bag, find the probability that both are blue.
A.(3/38) B.(1/19) C..(1/38) D.(2/19) E.(3/19)

Q13.'H' and 'G' together start a business by investing in a ratio of 4:5, respectively, and the ratio of the period of investment of 'H' and 'G' is 7:8, respectively. If, at the end of the business, they received Rs. 85,000 as profit out of which they donate 20%, then find the profit received by 'G'.
A.Rs. 28,000 B.Rs. 32,000 C.Rs. 40,000 D.Rs. 24,000 E.Rs. 30,000

Q14.The downstream speed of a boat is 5 times the speed of the stream. If the boat can cover 180 km upstream in 15 hours, then find the time taken by the boat to cover 240 km in still water.
A.20 hours B.9 hours C.10 hours D.12 hours E.15 hours

Q15.What will come in the place of question mark (?) in the given expression?
{(90 ÷ 15) X 18} ÷ 9 + 60% of 30 = ?
A.24 B.38 C.20 D.30 E.12

Q16. What will come in the place of question mark (?) in the given expression?
$(25^2 - 15^2)$ % of 560 ÷ 16 X 7 = $?^2$
A.9 B.2 C.4 D.7 E.10

Q17. What will come in the place of question mark (?) in the given expression?
{(342 + 138 - 80) ÷ 80} X 18 = ? X 9
A.20 B.12 C.10 D.15 V E.8

Q18. What will come in the place of question mark (?) in the given expression?

20% of 30% of 40% of 4000 + 4 = ?^{2}

A.8 B.12 C.11 D.9 E.10

Q19. What will come in the place of question mark (?) in the given expression?

(29 X 31 + 30% of 70) ÷ 23 ÷ 4 = ?

A.5 B.20 C.8 D.10 E.15

Q20. What will come in the place of question mark (?) in the given expression?

(65 X 24 ÷ 12 + 25) ÷ 5 + 50% of 220 = ?

A.131 B.141 C.155 D.121 E.161

Q21. What will come in the place of question mark (?) in the given expression?

{(456 ÷ 6) + √(324 X 144) } ÷ 4 = ?

A.59 B.66 C.73 D.79 E.63

Q22.What will come in the place of question mark (?) in the given expression?

√(45% of 320) + 35% of 120 + 25% of 160 = ?

A.98 B.80 C.72 D.94 E.84

Q23. What will come in the place of question mark (?) in the given expression?

(12% of 250) ÷ 15 + 910 ÷ 13 = ? X 4

A.14 B.19 C.18 D.22 E.16

Q24.{ What will come in the place of question mark (?) in the given expression?

(132 ÷ 11) X 15 - 40% of 120} ÷ 11 = ?

A.15 B.14 C.12 D.10 E.9

Q25.The average mark of all boys in the class is 56, and the average mark of all girls is 42. The average mark of all 35 students is 50, then find the number of girls in the class.

A.10 B.12 C.20 D.15 E.18

Q26.The marked price of an item is Rs. 450 more than the selling price of the item. The item is sold at a profit of 75% For Rs. 350. Find the percentage by which the item was marked above its cost price.

A.250% B.325% C.300% D.150% E.400%

Q27.The ratio of the present age of 'P' and 'D' is 5:3, respectively. 8 years hence from now, the ratio of the ages of 'P' and 'D' becomes 7:5, respectively. Find the present age of 'Q' who is 5 years elder to 'P'.

A.15 years B.20 years C.25 years D.18 years E.12 years

Q28.In a garden of 350 trees, 40% are apple trees, and out of the remaining trees, 50% are mango trees, and the remaining trees are guava trees. Find the difference between the number of apple trees and Guava trees.

A.40 B.45 C.25 D.35 E.30

Q29.n a two-digit number, the unit digit is one more than half of the digit at the tens place. If the difference between the digits is 2, then find the number whose digits are reversed from the original number.

A.46 B.64 C.85 D.68 E.42

Directions [Set of 6 Questions]: Answer the questions based on the information given below.

The table given below shows the average number of kites made by four different kite makers in three different years and the ratio between the number of kites made by respective kite makers in 2022 to that in 2023. It also shows the number of kites made by the kite makers in 2021 as a percentage of the number of kites made in 2022 by respective kite makers.

Kite - makers	Average number of kites made	Ratio of number of kites made in 2022 to that in 2023	Number of kites made in 2021 as a percentage of number of kites made in 2022
B	149	5:4	90 1011%
C	130	2:1	66 23%
D	240	5:4	60%
E	185	3:4	75%

Note: Total number of kites made by each kite maker = number of kites made in 2021 + number of kites made in 2022 + number of kites made in 2023

Q30.Find the average number of kites made by 'C', 'D' and 'E' in 2021.

A.175 B.123 C.154 D.145 E.142

Q31.The number of kites made by 'E' is 2022 is how much percentage of the number of kites made by 'D' in 2023?

A.50% B.80% C.75% D.95% E.60%

Q32.Find the ratio of the number of kites made by 'B' in 2022 and that made by 'C' in the same year respectively.

A.8:9 B.6:7 C.13:15 D.11:12 E.8:11

Q33.Find the sum of number of kites made by 'B' in 2021 and 2023 together.

A.296 B.264 C.276 D.282 E.312

Q34.In 2023, if the average number of kites made by 'E' and 'F' is 256, and the number of kites made by 'F' in 2024 is 64 more than that made by him in 2023, then find the number of kites made by 'F' in 2024.

A.288 B.312 C.336 D.360 E.308

Q35.Find 40% of the difference between the number of kites made by 'D' in 2022 and the number of kites made by 'C' in 2023.

A.48 B.88 C.80 D.84 E.64

1.B
Solution
$24 + 3^2 = 33$
$33 + 4^2 = 49$
$49 + 5^2 = 74$
$74 + 6^2 = 110$
$110 + 7^2 = 159$
Therefore, 74 should come in place of 73.
Hence, option b.
2.A
Solution
13 + 4 = 17
17 + 8 = 25
25 + 16 = 41
41 + 32 = 73
73 + 64 = 137
Therefore, 41 should come in place of 47.
Hence, option a.
B3
3.B
Solution
421 + 3 = 424
424 + 5 = 429
429 + 7 = 436
436 + 9 = 445
445 + 11 = 456
Therefore, 424 should come in place of 423.
Hence, option b.
4.B
Solution
8 X 0.5 + 2 = 6
6 X 1 + 2 = 8
8 X 1.5 + 2 = 14
14 X 2 + 2 = 30
30 X 2.5 + 2 = 77
Therefore, 14 should come in place of 18.
Hence, option b.
5.B
Solution
$2^3 - 3 = 5$
$3^3 - 3 = 24$
$4^3 - 3 = 61$
$5^3 - 3 = 122$
$6^3 - 3 = 213$
$7^3 - 3 = 340$
Therefore, 122 should come in place of 123.
Hence, option b.
6.D
Solution
For Mohan,
Total number of teas sold = 120
So, the number of lemon teas sold = 120 X 0.4 = 48
So, the number of black teas sold = 120 - 48 = 72
Similarly,

Tea sellers	Total number of teas sold	Number of lemon teas sold	Number of black teas sold
Mohan	120	48	72
Rohan	80	52	28
Raj	90	45	45
Priyam	60	36	24
Tarun	70	21	49

So, required ratio = 48:28 = 12:7
Hence, option d.
7.D
So, the required amount = Rs. (15 X 36 + 12 X 24) = Rs. 828
Hence, option d.
8.B
Number of lemon teas sold to males = 45 X 0.8 = 36
Number of black teas sold to males = 45 X (8/9) = 40
So, required number of teas = 36 + 40 = 76
Hence, option b.
9.D
The total number of lemon teas sold by Mohan and Rohan = 48 + 52 = 100
Total number of teas sold by Raj and Priyam = 90 + 60 = 150
So, required percentage = (100/150) X 100 = $66\frac{2}{3}\%$
Hence, option d.
10.C
Total number of teas sold by Varun = 60 X (7/6) = 70
Number of lemon teas sold by Varun = 48 X (9/8) = 54
So, the number of black teas sold by Varun = 70 - 54 = 16
So, required difference = 49 - 16 = 33
Hence, option c.
11.D
Required average = (72 + 45 + 24) /3 = 47
Hence, option d.
12.B
Solution
Total number of balls in the bag = 8 + 7 + 5 = 20
Required probability = $^5C_2 \div {}^{20}C_2$ = (10/190) = (1/19)
Hence, option b.
13.C
Solution
Let the amount of investment of 'H' and 'G' be Rs. 4x and Rs. 5x respectively.
Also, let period of investment of 'H' and 'G' be 7y and 8y months respectively.
So, the ratio of the profit share received by 'H' and 'G', respectively,
= (4x X 7y) :(5x X 8y)
= 28xy:40xy
= 7:10
So, the remaining amount of profit after giving to charity = 85,000 X 0.8 = Rs. 68,000
So, the required amount = Rs. 68,000 X (10/17) = Rs. 40,000
Hence, option c.
14.E
Solution
Let the speed of the stream be 'x' km/hr and the downstream speed of the boat be 5x km/hr
So, the speed of the boat in still water = 5x - x = 4x km/hr
Or, upstream speed of boat = 4x - x = 3x km/hr
ATQ,
(180/15) = 3x

Or, 12 = 3x
So, 'x' = 4
So, the speed of boat in still water = 4 X 4 = 16 km/hr
So, required time = (240/16) = 15 hours
Hence, option e.

15.D

Solution

{(90 ÷ 15) X 18} ÷ 9 + 60% of 30 = ?
{6 X 18} ÷ 9 + 0.60 X 30 = ?
108 ÷ 9 + 18 = ?
12 + 18 = ?
? = 30
Hence, option d.

16.D

Solution

$\sqrt{(25^2 - 15^2)}$ % of 560 ÷ 16 X 7 = $?^2$
$\sqrt{(625 - 225)}$ % X 560 ÷ 16 X 7 = $?^2$
$\sqrt{(400)}$ % X 560 ÷ 16 X 7 = $?^2$
20% X 560 ÷ 16 X 7 = $?^2$
112 ÷ 16 X 7 = $?^2$
49 = $?^2$
? = ±7
Hence, option d.

17.C.

{(342 + 138 - 80) ÷ 80} X 18 = ? X 9
{(400 ÷ 80} X 18 = ? X 9
5 X 18 = ? X 9
90 = ? X 9
? = (90/9) = 10
Hence, option c.

18.E

Solution

20% of 30% of 40% of 4000 + 4 = $?^2$
0.20 X 0.30 X 0.40 X 4000 + 4 = $?^2$
96 + 4 = $?^2$
100 = $?^2$
? = ±10
Hence, option e.

19.D

Solution
(29 X 31 + 30% of 70) ÷ 23 ÷ 4 = ?
(899 + 0.3 X 70) ÷ 23 ÷ 4 = ?
(899 + 21) ÷ 23 ÷ 4 = ?
920 ÷ 23 ÷ 4 = ?
40 ÷ 4 = ?
? = 10
Hence, option d.

20.B

Solution

(65 X 24 ÷ 12 + 25) ÷ 5 + 50% of 220 = ?
(130 + 25) ÷ 5 + 0.50 X 220 = ?
155 ÷ 5 + 110 = ?
31 + 110 = ?
? = 141
Hence, option b.

21.C

Solution

{(456 ÷ 6) + $\sqrt{(324 X 144)}$ } ÷ 4 = ?
{76 + 216) } ÷ 4 = ?
292 ÷ 4 = ?
? = 73
Hence, option c.

22.D

Solution

$\sqrt{(45\% \text{ of } 320)}$ + 35% of 120 + 25% of 160 = ?
$\sqrt{(0.45 X 320)}$ + 0.35 X 120 + 0.25 X 160 = ?
$\sqrt{144}$ + 42 + 40 = ?
12 + 82 = ?
? = 94
Hence, option d.
Previous

23.C

Solution

(12% of 250) ÷ 15 + 910 ÷ 13 = ? X 4
(0.12 X 250) ÷ 15 + 70 = ? X 4
30 ÷ 15 + 70 = ? X 4
2 + 70 = ? X 4
72 = ? X 4
? = (72/4)
? = 18
Hence, option c.

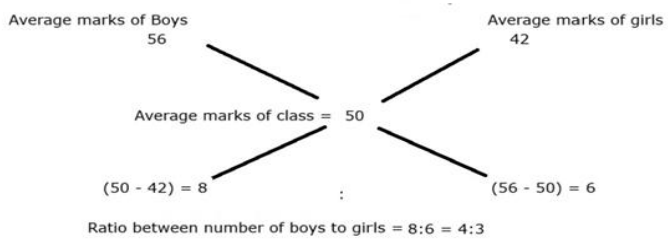
24.C

Solution

{(132 ÷ 11) X 15 - 40% of 120} ÷ 11 = ?
{12 X 15 - 0.40 X 120} ÷ 11 = ?
{180 - 48} ÷ 11 = ?
132 ÷ 11 = ?
? = 12
Hence, option c.

25.D

Solution



So, required number of girls = 35 X (3/7) = 15
Hence, option d.

26.C

Solution

Marked price of the item = Rs. 350 + 450 = 800
Or, cost price of the item = 350 X (100/175) = Rs. 200
So, required markup percentage = {(800 - 200) /200} X 100 = 300%
Hence, option c.

27.C

Solution
Let the present age of 'P' and 'D' be 5x years and 3x years respectively.
ATQ,
(5x + 8) /(3x + 8) = (7/5)
Or, 25x + 40 = 21x + 56
Or, 4x = 16
So, 'x' = 4
So, the present age of 'P'= 5 X 4 = 20 years
So, required age of 'Q' = 20 + 5 = 25 years
Hence, option c.

28.D
Solution
Number of apple trees = 350 X 0.4 = 140
Number of guava trees = (350 - 140) X 0.5 = 105
So, required difference = 140 - 105 = 35
Hence, option d.

29.A
Solution
Let the digit at the tens place be '2x'
So, the unit digit = (x + 1)
ATQ,
2x - (x + 1) = 2
Or, x - 1 = 2
Or, x = 2 + 1 = 3
So, the original number = 10 X 2x + x + 1
= 10 X 2 X 3 + 3 + 1
= 64
So, required number = 46
Hence, option a.

30.D
Solution
For 'B',
The total number of kites made = 149 X 3 = 447
Let the number of kites made in 2022 and 2023 be 5x and 4x respectively.
So, number of kites made in 2021 = 5x X (10/11) = (50x/11)
ATQ,
(50x/11) + 5x + 4x = 447
Or, (50x/11) + 9x = 447
Or, 149x = 447 X 11
So, 'x' = 33
So, the number of kites made in 2021 = (50 X 33) /11 = 150
So, the number of kites made in 2022 = 5 X 33 = 165
Or, the number of kites made in 2023 = 4 X 33 = 132
Similarly,

Kite - makers	Total number of kites made	Number of kites made in 2021	Number of kites made in 2022	Number of kites made in 2023
B	447	150	165	132
C	390	120	180	90
D	720	180	300	240
E	555	135	180	240

Required average = (120 + 180 + 135) ÷ 3 = 145
Hence, option d.

31.C
Required percentage = (180/240) X 100 = 75%
Hence, option c.

32.D
Required ratio = 165:180 = 11:12
Hence, option d.

33.D
Required sum = 150 + 132 = 282
Hence, option d.

34.C
In 2023, sum of number of kites made by 'E' and 'F' = 256 X 2 = 512
So, number of kites made by 'F' in 2023 = 512 - 240 = 272
So, number of kites made by 'F' in 2024 = 272 + 64 = 336
Hence, option c.

35.D
Required difference = (300 - 90) X 0.4 = 84
Hence, option d.