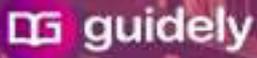## Ratio & Proportion – Set 1 (Eng)

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1. The average of the boys and girls in the class is 45 and the ratio of the boys to girls in the class is 5: 4. If 10 boys left from the class and 16 girls joined the class, then now what is the ratio of the number of boys to girls in the class?

A. 5: 7

B. 4: 5

C. 7: 9

D. 11: 13

E. None of these

2. The ratio of the number of male population in villages A and B is 10:9 and the ratio of the number of male to female population in A is 4:5. If the number of female population in B is 1100 more than the number of female population in A and the difference between the number of male population in A and B is 200, then find the number of female population in B?

A. 3200

B. 3600

C. 3400

D. 3500

E. 3300

3. Total number of students in the class is 40 and the ratio of the number of boys to girls in the class is 3:2. Each of them likes Maths or Physics. 25% of the girls like Maths and 30% of total students like Maths in the class. Find the number of boys like Maths?

A. 12

B. 15

C. 10

D. 6

E. None of these

4. A's income is 120% of B's income and C's income is 80% of A's income. If the average income of A, B and C is Rs.3950, what is C's income?

A. Rs.3200

B. Rs.3400

C. Rs.3600

D. Rs.3800

E. None of these

5. The ratio of milk to water in a solution is 2: 1. After adding 15 litres of water to the solution, then the ratio of milk to water interchanges. Then how much milk does the solution contain initially?

A. 15 litres

B. 10 litres

C. 13 litres

D. 16 litres

E. None of these

6. The ratio of the income of A and B is 5: 4 and the expenditure of A and B in the ratio of 6: 5. If the savings of A and B is Rs.8000 and Rs.5000 respectively, what is the difference between the income of A and B?

A.Rs.20000

B.Rs.15000

C.Rs.18000

D.Rs.12000

E. None of these

7. In a group of lions and doves, the number of legs is 30 more than twice the number of heads. How many lions are in the group?

A.15

B.10

C.8

D.12

E.11

8. The ratio of weight of A, B, C and D is 7: 11: 6: 4. If their average weight is 84 kg, find the sum of weight of A and C.

A.105 kg

B.77 kg

C.91 kg

D.119 kg

E. None of these

9. Two numbers are in the ratio of 2 (2/3): 3 (½). If each of the number is increased by 5, then the ratio becomes 17: 22. Find the smallest number?

A.100

B.80

C.90

D.120

E. None of these

10. A manager planned to give a bonus to 3 workers (P, Q and R). The total amount of bonus is Rs. 7500. 4 times of P's bonus is equal to 5 times of Q's bonus and 3 times of Q's bonus is equal to 2 times of R's bonus. Find the bonus got of Q?

A.Rs. 3200

B.Rs. 2800

C.Rs. 2400

D.Rs. 3500

E. None of these

11. If the ratio of the number of balls from box A and B is 3: 2 and the ratio of the number of red balls from A and B is 4: 5. If the boxes have two different color balls red and yellow and the difference between the number of balls from A and B is 10, then what is the ratio of the number of yellow balls from A to B?

A.3:4

B.3:2

C.4:3

D. Cannot be determined

E. None of these

12. A, B and C together have Rs. 23400. If 4/15th of A's amount is equal to 2/5th of B's amount and 5/8th of B's amount is equal to 9/16th of C's amount, then how much amount does C have?

A.Rs. 13800

B.Rs. 12500

C.Rs. 11000

D.Rs. 7200

E. None of these

13. A box contains the coins of 20 paise, 50 paise and 1 rupee is in the ratio of 5: 6: 8. If there is totally Rs. 24, then find the total number of 50 paise coins?

A.10

B.24

C.12

D.18

E. None of these

14. Two numbers are in the ratio of 4: 5. If the first number is doubled, while second number is increased by 60, then the new ratio is 2: 5. Find the sum of the two numbers initially.

A.42

B.36

C.84

D.58

E. None of these

15. 40% of the students in the class scored the mark in below 80 and the ratio of the number of students scored above 80 to exactly 80 marks in 3:4. If the number of students scored the marks exactly 80 is 12, then find the total number of students in the class?

A.40

B.45

C.35

D.30

E.50

ANSWER WITH EXPLANATION

1. Answer: A

Total students in the class = 45 * 2 = 90

Number of boys = 5/9 * 90 = 50

Number of girls = 4/9 * 90 = 40

Current number of boys in the class = 50 – 10 = 40

Girls = 40 + 16 = 56

Required ratio = 40: 56 = 5: 7

2. Answer: B

Number of male population in A = 10/1 * 200 = 2000

Number of female population in A = 5/4 * 2000 = 2500

Number of female population in B = 2500 + 1100 = 3600

3. Answer: E

Number of girls = 2/5 * 40 = 16

Number of students like Maths = 30/100 * 40 = 12

Number of girls like Maths = 25/100 * 16 = 4

Number of boys like Maths = 12 – 4 = 8

4. Answer: C

A = 120/100 * B

A/B = 6/5

C = 80/100 * A

C/A = 4/5

A:B:C = 30:25:24

A + B + C = 3950 * 3 = 11850

C's income = 24/79 * 11850 = 3600

5. Answer: B

The ratio of milk to water in a solution = 2: 1(2x, x)

According to the question,

2x / (x+ 15) = (1/2)

x + 15 = 4x

3x = 15

x = 5

Initially, Milk = 2x = 10 litres

6. Answer: E

The ratio of the income of A and B = 5: 4 (5x, 4x)

(5x – 8000)/(4x – 5000) = 6/5

24x – 30000 = 25x – 40000

x = 10000

Difference = 5 * 10000 – 4 * 10000 = 10000

7. Answer: A

Let the number of lions be x and number of doves be y.

Then 4x + 2y = 2(x + y) + 30

=> 2 x = 30

=> x = 15

8. Answer: E

The ratio of weight = 7: 11: 6: 4 (7x, 11x, 6x, 4x)

Average weight = 84 kg

=>(7x + 11x + 6x + 4x)/4 = 84

=>28x/4 = 84

=>x = 12

Required sum = (7 * 12) + (6 * 12) = 156 kg

9. Answer: B

Two numbers are in the ratio = (2 (2/3): 3 (½))

= > (8/3: 7/2) = 16: 21 (16x, 21x)

Given,

(16x + 5)/(21x + 5) = (17/22)

352x + 110 = 357x + 85

5x = 25

x = 5

The smallest number = 16x = 80

10. Answer: E

The total amount of bonus = Rs. 7500

4 * P = 5 * Q

(P / Q) = (5 / 4)

3 * Q = 2 * R

(Q / R) = (2 / 3)

The ratio of P, Q and R = 5: 4: 6

15's = 7500

1's = 500

The share of Q = Rs. 2000

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11. Answer: D

3x – 2x = 10

x = 10

Number of balls from A = 3 * 10 = 30

Number of balls from B = 2 * 10 = 20

We cannot find the answer.

12. Answer: D

A + B + C = Rs. 23400

(4/15)* A = (2/5)* B

(A/B) = (2/5) * (15/4) = 3/2

(5/8)* B = (9/16)* C

(B/C) = (9/16) * (8/5) = 9/10

The ratio of A, B and C = 27 : 18 : 20

65's = 23400

1's = 360

C's amount = 20's = Rs. 7200

13. Answer: C

A box contains the coins of 20p, 50p and 1 rupee is in the ratio = 5: 6: 8 (5x, 6x, 8x)

24 = [(5x * 20) / 100] + [(6x * 50) / 100] + [(8x * 1)]

24 = (100x/100) + (300x/100) + 8x

24 = x + 3x + 8x

24 = 12x

x = 2

The total number of 50p coins = 6x = 12

14. Answer: B

Let the number be 4x and 5x.

According to question,

(4x * 2)/(5x + 60) = 2/5

40x = 10x + 120

30x = 120

x = 4

Required sum = 4 * 4 + 5 * 4 = 36.

15. Answer: C

Number of students scored above 80 = 3/4 * 12 = 9

40% of the students scored below 80, so 60% of the students scored above 80 and exactly 80 marks.

Number of students scored below 80 = 40/60 * (9 + 12) = 14

Total number of students = 14 + 9 + 12 = 35

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