# Ratio and Proportion

**1.** Manish and Satish invested 2/5 and 7/10 of their respective monthly salaries and ratio between monthly saving of Manish and Satish is 5 : 6. If monthly salary of Satish is Rs.60,000 then find Manish’s monthly salary (in Rs.)?

**(A)** 25,000 **(B)** 30,000

**(C)** 40,000 **(D)** 45,000

**(E)** 50,000

**2.**  In college X, number of boys is twice the number of girls. Ratio of the boys in college X & college Y is 1 : 3. If the number of girls in college Y is 103 and total students in both colleges is 1048 then what is the number of girls in college X?

**(A)** 105  **(B)** 150

**(C)** 110  **(D)** 95

**(E)** 120

**3.**  The breath and length of rectangle is in the ratio 4:7. If perimeter is 88 cm then find the area of rectangle.

**(A)** 448 cm2 **(B)** 396 cm2

**(C)** 414 cm2 **(D)** 554 cm2

**(E)** 534 cm2

**4** A sum of money is divided among P, R,T and Z in the ratio 4 : 7 : 9 : 14. If the share of P and R is Rs 4604 more That T, then what is the total amount of T and Z together.

**(A)** 52946 **(B)** 31223

**(C)** 40232 **(D)** 32321

**(E)** 35212

**5.**  The ratio of the prices of two houses A and B was 4 : 5 last year. This year, the price of A is increased by 25% and that of B by Rs. 50,000. If their prices are now in the ratio 9 : 10, the price of A last year was :

**(A)** Rs. 3,60,000 **(B)** Rs. 4,50,000

**(C)** Rs. 4,80,000 **(D)** Rs. 5,00,000

**(E)** Rs. 3,30,000

**Direction (6 – 10): There are 450 coupons which can be used in Pedicure and Hair cutting. Ratio between Males to Females who use their coupons in Hair cutting is 13 : 7.**

Number of males who use their coupons in Pedicure is 72 more than number of females who use their coupon in Hair cutting. Total number of males who use their coupon in   
Pedicure and Haircutting together is 174 more than total number of females who use their coupon in Pedicure and Haircutting together.

**6.**  Males who use their coupon in Pedicure is what percent of the Males who use their coupons in Haircutting?

**(A)** 200%

**(B)** 100%

**(C)** None of the given options

**(D)** 0%

**(E)** 150%

**7.**  Find the ratio between Total number persons who use their coupons in Pedicure to total number of persons who use their coupons in Haircutting?

**(A)** 52 : 23

**(B)** None of the given options

**(C)** 8 : 9

**(D)** 8 : 7

**(E)** 7 : 8

**8.**  Females who use their coupon in Haircutting is how much more than Females who use their coupon in Pedicure?

**(A)** 15 **(B)** 45

**(C)** 30

**(D)** None of the given options

**(E)** 60

**9.**  Out of males who use their coupons in Haircutting, 25% belongs to city A, then find number of males who use their coupons in Haircutting which doesn’t belongs to city A?

**(A)** None of the give options

**(B)** 108 **(C)** 126

**(D)** 117 **(E)** 135

**10.** Ratio between Males who use their coupon in Pedicure to that of in Spa is 4 : 5, while ratio between Females who use their coupon in Haircutting to that of in Spa is 6 : 11. Find total number of people who use their coupons in Spa?

**(A)** 349 **(B)** 481

**(C)** 300 **(D)** 440

**(E)** None of the given options

**11.** A certain amount was distributed among A, B and C in the ratio 1 : 3 : 5 but it was actually distributed in ratio 2 : 3 : 6 due to which B got Rs 42 less. Find the amount actually to be received by A.

**(A)** Rs 66 **(B)** Rs 77

**(C)** Rs 84 **(D)** Rs 126

**(E)** Rs 154

**12.** A sum of money is divided between two persons in the ratio of 19:16. If the share of one person is Rs. 90 less than that of the other, what is the sum?

**(A)** Rs.1000 **(B)** Rs.1050

**(C)** Rs.1500 **(D)** Rs.1820

**(E)** Rs. 2000

**13.** The ratio of age of father and son is x:y. If father's age is increased by 1 years and son's age is increased by 5 year then the new ratio of their ages becomes 17:13. Given that the sum of their actual ages is 54. Find the actual ratio of their ages:

**(A)** 21:22 **(B)** 17:37

**(C)** 11:7 **(D)** 13:19

**(E)** None of these

**14.** 900 toffees is to be divided among three friends say A, B and C. C gets half of what A and B together gets and B gets 5/3 times as much as A. How many toffees does A have?

**(A)** 225 **(B)** 250

**(C)** 275 **(D)** 350

**(E)** Insufficient data

**15.** The ratio between Sumi’s and Pari’s age at present is 2:3. Sumi is 6 years younger than Pari. The ratio of Sumi’s age to Pari’s age after 6 years will be:

**(A)** 1:2 **(B)** 2:3

**(C)** 3:4 **(D)** 3:8

**(E)** None of these

**16.** The ratio of students in a coaching institute preparing for admission in IIT and IIM is 5:6. The ratio of fees collected from each of the student preparing for admission in in IIT and IIM is 20:15. If the total amount collected from all the students is Rs. 3.8 lakhs, what is the total amount collected from students aiming to admission in IIM only?

**(A)** Rs. 120000 **(B)** Rs. 180000

**(C)** Rs. 100000 **(D)** Rs. 175000

**(E)** None of these

**17.** The ratio of money with Rehan and Gopi is 7 :17 and that with Gopi and Krishen is 7:17. If Rehan has Rs.490, Krishen has -

**(A)** Rs.2980 **(B)** Rs.2890

**(C)** Rs.3020 **(D)** Rs.1500

**(E)** None of these

**18.** The monthly incomes of 2 persons are in ratio 4:5 and monthly expenses in ratio 7:9. If each one of them saves Rs.50 a month, then what are their monthly incomes?

**(A)** Rs. 700 and Rs. 800

**(B)** Rs. 600 and Rs. 700

**(C)** Rs. 500 and Rs. 600

**(D)** Rs. 400 and Rs. 500

**(E)** None of these

**19.** The respective ratio between the ages of A, B and C is 2: 3: 5. If the average of their present ages is 70 years then what would be the difference in ages of B and C 10 years ago?

**(A)** 52 years **(B)** 63 years

**(C)** 42 years **(D)** 21 years

**(E)** None of these

**20.** The age of two persons A and B are in the ratio of 7 : 5 . After 6 years the ratio will become 4: 3. What is the sum of age of A and B?

**(A)** 72 years **(B)** 60 years

**(C)** 64 years **(D)** 42 years

**(E)** 30 years

**Solution**

**1. Answer: (A)**

Satish’s monthly saving = 60,000

Manish’s monthly saving =

= 15,000 Rs.

Manish’s monthly salary = 15,000

= 25,000 Rs.

**2.**  **Answer: (A):**

The correct answer is Option 1 i.e. 105

Suppose the number of girls in college

X = n

Number of boys in college X = 2n

Since Ratio of the boys in college X & college Y is 1 : 3;

So, number of boys in college Y = 3 × 2n

= 6n

It is given that total students in both colleges is 1048.

Hence,

n + 2n + 6n + 103 = 1048

9n = 945

n = 105

Hence, number of girls in college X = 105

**3.**  **Answer: (A)**

**Given:**

Ratio of Breadth and length of rectangle

= 4 : 7

Perimeter = 88 cm

**Formulae used:**

Perimeter = 2(L + B)

Area = Length × Breadth

**Calculation:**

Let the breadth and length be 4x and 7x respectively

So, perimeter of rectangle = 2(L + B)

⇒ 2(7x + 4x) = 88cm

⇒ 2 × 11x = 88 cm

⇒ 22x = 88 cm

⇒ x = 4 cm

So, Breadth = (4 × 4) cm = 16 cm

Length = (7 × 4) cm = 28 cm

Now, Area = Length × Breadth

⇒ (28 × 16) cm2

⇒ 448 cm2

**∴ The area of rectangle is 448 cm2**

**4.** **Answer: (A)**

Let share of P, R, T and Z to be 4x, 7x, 9x and 14x

So,

4x + 7x – 9x = 4604

2x = 4604

x = 2302

Required amount = 9x + 14x

= 23x

= 23 × 2302

= 52946

**5.**  **Answer: (A)**

Let the prices of two houses A and B be Rs. 4x and 5x, respectively for the last year.

Then, the prices of A this year = Rs. (1.25 × 4x) and that of B = Rs. (5x + 50,000

⇒ 50x – 45x 45000 ⇒ 5x = 4,50,000

⇒ X = 90,000

Hence, the price of A last year was

4x = Rs. 3,60,000

**Answer: (6 – 10)**

Let Males and females who use their coupons in

Haircutting be 13x and 7x respectively.

⇒ Males who use their coupons in pedicure = 7x + 72

Then Females who use their coupons in pedicure

=

|  |  |  |  |
| --- | --- | --- | --- |
| Pedicure | | Haircutting | |
| Males | Females | Males | Females |
| 7x + 72 | 378 – 27x | 13x | 7x |

ATQ,

40*x* – 306 = 174

40*x* = 480

*x* = 12

|  |  |  |  |
| --- | --- | --- | --- |
| Pedicure | | Haircutting | |
| Males | Females | Males | Females |
| 156 | 54 | 156 | 84 |

**6**  **Answer: (B)**

Required % =

**7.**  **Answer: (E)**

Required ratio =

**8.**  **Answer: (C)**

Required difference = 84 54 = 30

**9.**  **Answer: (D)**

Number of males who use their coupons in Haircutting which doesn’t belongs to city A

= 156

**10.**  **Answer: (A)**

Males who use their coupons in Spa

**=** 156

Females who use their coupons in Spa = 84

Total number of people who their coupon in Spa

= 195 + 154 = 349

**11.**  **Answer: (B)**

Let total amount be Rs. 99x

ATQ,

Required amount =

**12.**  **Answer: (B)**

Let the ratio of money with two persons = 19x:16x

16x = 19x – 90

So, x = 30

Sum = 19x + 16x = 35x = 35 x 30 = Rs.1050. Hence, option b.

**13.**  **Answer: (C)**

Sum of their actual ages = 54

x + y = 54

(x + 1)/(y + 5) = 17/13

13x + 13 = 17y + 85

x + y = 54

Solving, we get x = 33

and y = 21

Required ratio = 33:21 = 11:7.

**14.**  **Answer: (A)**

A + B + C = 900

C = (A + B)/2

B = 5A/3

C = 4A/3

A + 5A/3 + 4A/3 = 900

4A = 900

A = 225.

**15.**  **Answer: (C)**

Let their ages be 2x and 3x respectively.

According to the question, 3x – 2x = 6

Therefore, x = 6

Sumi’s age = 12 years and Pari’s age = 18 years.

After 6 years, Sumi’s age = 18 years And Pari’s age = 24 years

Therefore, Ratio of their ages after 6 years

= 18 :24 = 3:4.

**16.**  **Answer: (B)**

The ratio of fees collected from IIT:IIM aspirants = 5x × 20y : 6x × 15y = 100xy : 90xy i.e. 10xy : 9xy

Therefore, the amount collected from IIM aspirants = 9/19 × 3.8 lakh = Rs. 180000.

**17.**  **Answer: (B)**

Rehan : Gopi = 7:17 = 49:119

Gopi : Krishen = 7:17 = 119:289

Therefore, Rehan : Gopl : Krishen

= 49:119:289

Or, Rehan : Krishen = 49: 289

Thus, 49 : 289 = 49 : x

Or, x = (289x490)/49

Therefore, x = Rs. 2890. Hence, option b.

**18.**  **Answer: (D)**

Let the income of the persons be Rs. 4x and Rs. 5x respectively

Let the expenses of the persons be Rs. 7y and Rs. 9y respectively

Therefore,

4x - 7y = 50

5x - 9y = 50

So, x = 2y

y = Rs. 50 and x = Rs. 100

So monthly incomes = Rs. 400 and Rs. 500.

**19.**  **Answer: (C)**

70 = (2x + 3x + 5x)/3

= > x = 21

= > B's age = 63

= > C's age = 105

Required difference = 95 - 53 = 42

**20.**  **Answer: (A)**

Let the age of A = 7x and age of B = 5x

After 6 years, age of A = (7x + 6) years and B = (5x + 6) years

According to the question,

(7x + 6)/(5x + 6) = 4/3 or, x = 6

Age of A = 42 years

Age of B = 30 Years

sum = (42 + 30) 72 years.