AILET

Questions for Practice on Ratio and Proportion

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Questions for Practice on Ratio and Proportion

1. Betty decided to distribute a sum of money among her four children Anna, Bella, Rosy and Charlie in the ratio of 6:7:3:5. If Bella and Rose together got Rs. 1300, what percentage of total money did Charlie get?
2. The ratio of water to milk is 2:3 in 100 litres of Tea. How much water needs to be added to make the final ratio to be 6:5?
3. If you take out two whole numbered balls from a bag without looking at it and both the numbers are in the ratio of 3:8 and the ¼ th of the greater number is 7 less than the smaller one. Find the two numbers.
4. A piggy bank contains the various coins of different values along with a few currency notes. The total money in the piggy bank if Rs. 3500 and ¼ th of the total amount is in the form of currency notes and rest in the form of coins of Rs. 1, Rs. 2 and Rs. 5 in the ratio of 9:3:2. Find the number of Rs.5 coins in the piggy bank.
5. The ratio of engineering students to Law students on a Camp is 2:7. When another group of 40 engineering students join, the ratio becomes 2:3. Find the total number of students in the camp initially.
6. 3 friends (Alan, Jake and Evelyn) took up a summer job for a week at a fast-food joint. Alan worked for 2 days, Jake worked for 4 days and Evelyn worked for 1 day. Their total earnings together added up to Rs. 1400. Find how much would they have earned if Alan would have worked for 4 days and Jake would have worked for 5 days?
7. If the price of sugar is Rs. 4000 per ton, what will be the price of 37 kilograms of sugar?
8. If a train covers a distance of 270 kilometres in 3 hours, then at a constant speed, how much distance can it cover in 17 hours?
9. The ratio of prices of the shoes of two brands A and B are in the ratio 4:5. If the price is increased by Rs. 500 each and the new ratio is 5/6, find the original price.

10. If there are male and female students in a university of 6000 students are in the ratio of 3:2. How many female students must take admission in order to have equal no. of male and female students?

Explanations:

1. Since the money is distributed in the ratio of 6:7:3:5, let the money to Anna, Bella, Rosy and Charlie be 6x, 7x, 3x and 5x respectively.

As per the question,

7x+3x = Rs. 1300

10x = 1300

x= Rs. 130

The money Charlie will get = 5x

= 5 *130

= Rs. 650

Total money distributed by Betty = 6x+7x+3x+5x = Rs. 2730

Percentage of money Charlie will get = (650/2730)*100

= 23.8 %

1. Let the water and milk in tea be 2x and 3x respectively.

2x+3x = 100 litres

x = 20 litres

In 100 litres of tea,

Quantity of water = 2x = 40 litres

Quantity of milk = 3x = 60 litres

To make the final ratio 6:5, let the water to be added be w.

40+w : 60 = 6:5

5*(40+w) = 60*6

200+5w = 360

5w= 160

w= 32 litres

Therefore water needed to be added is 32 litres

1. Let the two numbers be 3x and 8x.

As per the question,

(1/4)*8x + 7 = 3x

2x+7 = 3x

x = 7

Therefore the two numbers are

3x = 3*7 = 21

8x = 8*7 = 56

1. Total money in the piggy bank = Rs 3500

Amount in the form of Currency notes = (1/4)*3500

= Rs. 875

Money in the form of coins = Rs. 2625

Let the coins of Rs. 1, Rs. 2 and Rs. 5 be 9x, 3x and 2x.

As per the question,

9x + 2*(3x)+5*(2x) = 2625

9x+6x+10x = 2625

x = 2625/ 25

= 105

Therefore, no. of Rs. 5 coins = 2*105 = 210 coins

1. Let the number of Engineering students and law students be 2x and 7x respectively.

When 40 engineering students are added, the ratio becomes 2:3

As per the question,

2x +40 : 7x = 2:3

3*(2x+40) = 2*(7x)

6x +120 = 14x

8x = 120

x = 15

Therefore,

No. of Engineering students in the camp initially = 2*15 = 30

No. of Law students in the camp initially = 7*15 = 105

Total students initially = 105+30 = 135

1. Let the money received by Alan, Jake and Evelyn be 2x, 4x and 1 x respectively.

As per the question:

2x+4x+x = 1400

x= 1400/7

= 200

Therefore, per day payment for each person, x = Rs. 200

If Alan would have worked for 4 days and Jake would have worked for 5 days,

The total amount received would be = 4x +5x

= 9x

= 9*200

= 1800

1. Here, the concept of proportionality will apply.

One ton = 1000 kilograms

Let the price of 37 kg of sugar be x

1 ton of sugar / Rs. 4000 = 37 kg of sugar /x

Applying the formula,

If x:y = m:n, then it means than x, y, m and n are in proportion and x*n =y*m

1000/4000 = 37/x

1000x = 37*4000

x = (37*4000)/1000

= Rs. 148

1. Let the distance covered in 17 hours be x km.

Here, let us find out the ratio between the distances = 270 : x

The ratio between the time taken = 3: 17

Since the speed is constant

270:x = 3:17

270* 17 = 3*x

x = (270*17)/ 3

= 90* 17

= 1530 km.

1. The ratio of prices of original prices of shoes of brand A and B = 4:5

Now, when the prices are increased,

4x+ 500 : 5x+500 = 5:6

Applying the formula,

If x:y = m:n, then it means than x, y, m and n are in proportion and x*n =y*m

4x+ 500 : 5x+500 = 5:6

6*(4x+500) = 5*(5x+500)

x = 500

Original Price of shoes of Brand A = 4 * 500 = Rs.2000

Original Price of shoes of Brand B= 5 * 500 = Rs. 2500

1. Let the number of male and female students be 3x and 2x respectively.

Total students = 5x = 6000

x = 6000/5 = 1200

No. of male students = 1200 * 3 = 3600

No. of female students = 1200* 2 = 2400

For there to be equal no. of male and female students,

No. of female students to take admission = 3600- 2400

= 1200

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