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Ratio and Proportion

Q1. Express each of the following ratios in simplest form:

a. $\frac{1}{3} : \frac{1}{9} : \frac{1}{6}$ = ____ : ____ : ____

b. $\frac{1}{10} : \frac{1}{100} : \frac{1}{50}$ = ____ : ____ : ____

Q2. In a furniture shop, the ratio of tables to chairs is 2:5. If there are 12 more chairs than tables, find the number of tables in the shop.

Answer: _____

Q3. Compare the ratios and put the correct sign <, > or =:

a. 2:3 ____ 3:15

b. 7:9 ____ 2:5

c. 4:3 ____ 13:7

d. 13:21 ____ 5:12

Q4. The ratio of teachers to students in a school is 1:18. How many teachers will be needed for a class of 90 students?

Answer: _____

Q5. A trapezium having area 150 sq units is divided into two triangles and one rectangle as given below. If the ratio of the areas of the three divisions is 3:5:2, find the area of each division.

Answer:

Area of Division I: _____

Area of Division II: _____

Area of Division III: _____

Q6. Find the value of x in the following proportions:

a. 4 : x :: 8 : 64

x = _____

b. 35: 80 :: x : 16

x = _____

Q7. Find the mean proportion between 25 and 121.

Answer: _____

Q8. If $p : q = \frac{5}{6} : 1\frac{1}{3}$ and $q : r = \frac{2}{3} : \frac{1}{6}$, find p : q : r.

p : q : r = ___ : ___ :___

Q9. Check whether the following are in proportion or not, and tick Yes/No:

a. 6, 4, 12, 8 : (Yes/No)

b. 4, 12, 6, 45 : (Yes/No)

c. 18, 8, 54, 24 : (Yes/No)

Q10. A line segment AB = 2.4 cm is divided into 3 parts in the ratio 2:3:7. Calculate the length of each part and fill in the blanks below.

Length of the three parts of line segment AB are : ____ cm, ____ cm, ____ cm

Also find the following ratios:

a. Ratio of the length of the smallest line segment to that of the longest line segment : _____

b. Ratio of the length of the smallest line segment to that of the line segment AB : _____

c. Ratio of the length of the longest line segment to that of the line segment AB : _____

Answers

1. a. 6 : 2 : 3; b. 10 : 1 : 2
2. 8 tables
3. a. >
   b. >
   c. <
   d. >
4. 5 teachers
5. Area of Division I: 45 sq units; Area of Division II: 75 sq units; Area of Division III: 30 sq units
6. a. x = 32; b. x = 7
7. 55
8. 5 : 8 : 2
9. a. Yes; b. No; c. Yes
10. Length of the three parts of line segment AB are : 0.4 cm, 0.6 cm, 1.4 cm ;
    a. 2:7; b. 1:6; c. 7:12