Proportion

A. Choose the correct answer:

1. If 2:3 = 4:6, then the numbers are in

    a) proportion   b) division

    c) inverse ratio   d) equal parts

2. 5, 10, 15, and 30 are in proportion if

    a) $5 \times 15 = 10 \times 30$ b) $5 \times 30 = 10 \times 15$

    c) $5 \times 10 = 15 \times 30$ d) $5 + 30 = 10 + 15$

3. The first and fourth terms of a proportion are called

    a) means   b) extremes

    c) middle terms   d) equal terms

4. Which of the following is in proportion?

    a) 2:4 = 3:6   b) 3:5 = 6:10

    c) 4:5 = 8:11   d) 7:9 = 14:18

5. If 4:7 = x:21, then x is

    a) 9   b) 10

    c) 12   d) 8

B. Write the Missing Terms to Complete the Sentences:

1. If a:b = c:d, then a, b, c, d are said to be in _____.

2. In the proportion 3:6 = 4:8, the means are _____ and _____.

3. In a proportion, the product of the extremes is equal to the product of the ____.

4. If x:5 = 10:15, then x = _____.

5. 6, 12, 18, and 36 are in _____.

C. Mark each sentence with a True (✔) or False (✗):

1. In a proportion, cross products are always equal.   _____

2. 2:5 = 4:10 is a proportion.   _____

3. 9:12 = 6:8 is in proportion.   _____
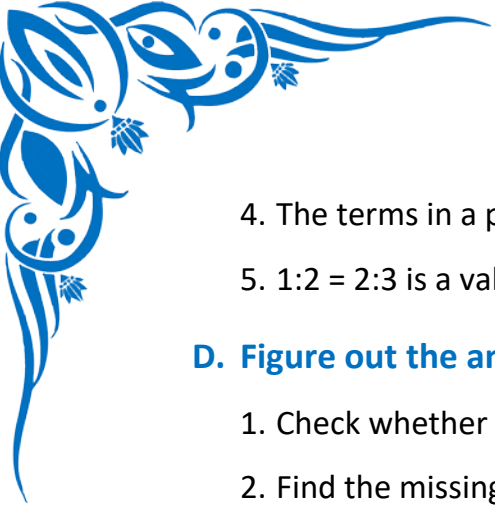
4. The terms in a proportion must be of the same unit.   _____

5. 1:2 = 2:3 is a valid proportion.   _____

D. Figure out the answers to these questions:

1. Check whether 8:10 and 12:15 are in proportion.

2. Find the missing term: 7:14 = x:28.

3. Are the numbers 2, 4, 6, and 12 in proportion? Show your working.

4. The cost of 3 pens is Rs. 45. What is the cost of 7 pens if the cost is in proportion.

5. The heights of two trees are in the ratio 5:6. If the shorter tree is 15 m, find the height of the taller one.

E. Challenge yourself with these questions:

1. If 3:5 = x:15, find the value of x.

2. Write any 4 numbers that are in proportion and verify them.

3. A 2 m tall pole casts a 3 m shadow. At the same time, a tree casts a shadow of 12 m. Find the height of the tree.

4. Find the value of y in the proportion 6:y = 9:12.

5. If a:b = b:c and a = 3, b = 6, find the value of c.

6. The first three terms of a proportion are 12, 36 and 27. Find the fourth proportional.