Extra Practice · 6.3 USING PROPORTIONS

Solve each proportion.

1. $\dfrac{4}{12} = \dfrac{x}{6}$ _____

2. $\dfrac{r}{15} = \dfrac{4}{12}$ _____

3. $\dfrac{8}{m} = \dfrac{10}{25}$ _____

4. $\dfrac{4}{2.5} = \dfrac{16}{j}$ _____

5. $\dfrac{1.2}{2.4} = \dfrac{k}{14}$ _____

6. $-\dfrac{a}{6} = \dfrac{6}{9}$ _____

7. $\dfrac{2x}{21} = \dfrac{12}{42}$ _____

8. $\dfrac{6}{3z} = \dfrac{12}{30}$ _____

9. $\dfrac{18}{24} = \dfrac{30}{4r}$ _____

10. $\dfrac{x+1}{4} = \dfrac{9}{12}$ _____

11. $\dfrac{2}{z-5} = -2$ _____

12. $\dfrac{4}{7} = \dfrac{x-1}{x+2}$ _____

In Exercises 13–16, define a variable, write a proportion, and solve.

13. Lillian paid $9 for 6 blank cassette tapes. How much will she pay for 24 blank cassette tapes?

_____

14. A lawn fertilizer must be applied at a rate of 3 gallons for every 10 square feet. How many gallons are needed to fertilize 250 square feet?

_____

15. Roland works 20 hours each week and makes $160. How much will Roland make if he works 35 hours?

_____

16. A recipe calls for $\dfrac{1}{3}$ cup of milk for every $1\dfrac{1}{2}$ cups of flour. If you increase the recipe to use 3 cups of flour, how many cups of milk are needed?

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RETEACHING 6.3 USING PROPORTIONS

You can use the Cross-Products Property to solve proportions as shown in the Examples below.

Example 1
Solve the proportion.

$$\frac{x}{5} = \frac{8}{20}$$

Solution

Use the Cross-Products Property to solve for x.

$$\frac{x}{5} = \frac{8}{20}$$

$$20 \cdot x = 5 \cdot 8$$

$$20x = 40$$

$$\frac{20x}{20} = \frac{40}{20}$$

$$x = 2$$

Example 2
Solve the proportion.

$$\frac{6}{14} = \frac{9}{z}$$

Solution

Use the Cross-Products Property to solve for z.

$$\frac{6}{14} = \frac{9}{z}$$

$$z \cdot 6 = 14 \cdot 9$$

$$6z = 126$$

$$\frac{6z}{6} = \frac{126}{6}$$

$$z = 21$$

EXERCISES

Use the Cross-Products Property to solve each proportion.

1. $\dfrac{x}{4} = \dfrac{12}{16}$ _____

2. $\dfrac{z}{6} = \dfrac{8}{12}$ _____

3. $\dfrac{5}{v} = \dfrac{20}{24}$ _____

4. $\dfrac{4}{n} = \dfrac{16}{28}$ _____

5. $\dfrac{3}{5} = \dfrac{m}{15}$ _____

6. $\dfrac{6}{9} = \dfrac{8}{w}$ _____