

## Ratio: Skill 5 - 25D

## Equivalent Ratios and Proportions

## Use Cross Products to Solve a Proportion

**Directions:** Find the missing number. Use cross products.

Solve $\frac{3}{4} = \frac{n}{12}$  Use cross products. Multiply the numerator of one fraction by the denominator of the other fraction.	$3 \times 12 = 4 \times n$ Use cross products $36 = 4n$ Multiply. $\frac{36}{4} = \frac{4n}{4}$ Divide each side by 4. $9 = n$
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**Directions:** Find the missing number. Use cross products.

1.  $\frac{1}{2} = \frac{n}{4}$

2.  $\frac{6}{3} = \frac{n}{12}$

3.  $\frac{3}{5} = \frac{6}{n}$

4.  $\frac{2}{3} = \frac{n}{12}$

5.  $\frac{n}{4} = \frac{9}{12}$

6.  $\frac{12}{24} = \frac{n}{2}$

7.  $\frac{10}{12} = \frac{n}{6}$

8.  $\frac{7}{8} = \frac{14}{n}$

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**Equivalent Ratios and Proportions****Directions:** Find the missing number. Use cross products.

9.  $\frac{20}{35} = \frac{n}{7}$

10.  $\frac{5}{n} = \frac{20}{28}$

11.  $\frac{4}{5} = \frac{n}{15}$

12.  $\frac{12}{8} = \frac{n}{2}$

13.  $\frac{n}{50} = \frac{3}{5}$

14.  $\frac{n}{16} = \frac{3}{8}$

15.  $\frac{7}{8} = \frac{21}{n}$

16.  $\frac{7}{4} = \frac{14}{n}$

17.  $\frac{36}{12} = \frac{9}{n}$

18.  $\frac{n}{4} = \frac{20}{16}$

**Directions:** Find the missing number. Use cross products.

$$1. \quad \frac{1}{2} = \frac{n}{4}$$

$$1 \times 4 = 2 \times n$$

$$4 = 2n$$

$$\frac{4}{2} = \frac{2n}{2}$$

$$2 = n$$

$$2. \quad \frac{6}{3} = \frac{n}{12}$$

$$6 \times 12 = 3 \times n$$

$$72 = 3n$$

$$\frac{72}{3} = \frac{3n}{3}$$

$$24 = n$$

$$3. \quad \frac{3}{5} = \frac{6}{n}$$

$$3 \times n = 5 \times 6$$

$$3n = 30$$

$$\frac{3n}{3} = \frac{30}{3}$$

$$n = 10$$

$$4. \quad \frac{2}{3} = \frac{n}{12}$$

$$2 \times 12 = 3 \times n$$

$$24 = 3n$$

$$\frac{24}{3} = \frac{3n}{3}$$

$$8 = n$$

$$5. \quad \frac{n}{4} = \frac{9}{12}$$

$$n \times 12 = 4 \times 9$$

$$12n = 36$$

$$\frac{12n}{12} = \frac{36}{12}$$

$$n = 3$$

$$6. \quad \frac{12}{24} = \frac{n}{2}$$

$$12 \times 2 = 24 \times n$$

$$24 = 24n$$

$$\frac{24}{24} = \frac{24n}{24}$$

$$1 = n$$

$$7. \quad \frac{10}{12} = \frac{n}{6}$$

$$10 \times 6 = 12 \times n$$

$$60 = 12n$$

$$\frac{60}{12} = \frac{12n}{12}$$

$$5 = n$$

$$8. \quad \frac{7}{8} = \frac{14}{n}$$

$$7 \times n = 8 \times 14$$

$$7n = 112$$

$$\frac{7n}{7} = \frac{112}{7}$$

$$n = 16$$

$$9. \quad \frac{20}{35} = \frac{n}{7}$$

$$20 \times 7 = 35 \times n$$

$$140 = 35n$$

$$\frac{140}{35} = \frac{35n}{35}$$

$$4 = n$$

$$10. \quad \frac{5}{n} = \frac{20}{28}$$

$$5 \times 28 = n \times 20$$

$$140 = 20n$$

$$\frac{140}{20} = \frac{20n}{20}$$

$$7 = n$$

$$11. \frac{4}{5} = \frac{n}{15}$$

$$4 \times 15 = 5 \times n$$

$$60 = 5n$$

$$\frac{60}{5} = \frac{5n}{5}$$

$$12 = n$$

$$12. \frac{12}{8} = \frac{n}{2}$$

$$12 \times 2 = 8 \times n$$

$$24 = 8n$$

$$\frac{24}{8} = \frac{8n}{8}$$

$$3 = n$$

$$13. \frac{n}{50} = \frac{3}{5}$$

$$n \times 5 = 50 \times 3$$

$$5n = 150$$

$$\frac{5n}{5} = \frac{150}{5}$$

$$n = 30$$

$$14. \frac{n}{16} = \frac{3}{8}$$

$$n \times 8 = 16 \times 3$$

$$8n = 48$$

$$\frac{8n}{8} = \frac{48}{8}$$

$$n = 6$$

$$15. \frac{7}{8} = \frac{21}{n}$$

$$7 \times n = 8 \times 21$$

$$7n = 168$$

$$\frac{7n}{7} = \frac{168}{7}$$

$$n = 24$$

$$16. \frac{7}{4} = \frac{14}{n}$$

$$7 \times n = 4 \times 14$$

$$7n = 56$$

$$\frac{7n}{7} = \frac{56}{7}$$

$$n = 8$$

$$17. \frac{36}{12} = \frac{9}{n}$$

$$36 \times n = 12 \times 9$$

$$36n = 108$$

$$\frac{36n}{36} = \frac{108}{36}$$

$$n = 3$$

$$18. \frac{n}{4} = \frac{20}{16}$$

$$n \times 16 = 4 \times 20$$

$$16n = 80$$

$$\frac{16n}{16} = \frac{80}{16}$$

$$n = 5$$