SM2 10.1—Solving Proportions

Cross MULTIPLY and solve for x.

Solve each proportion. Round answers to the nearest hundredth if necessary.

1. $\frac{x}{6} = \frac{30}{15}$

$\frac{x}{6} \times \frac{30}{15}$

$15x = 6(30)$

Solve for x.

2. $\frac{12}{5} = \frac{x}{10}$

3. $\frac{4}{5} = \frac{x}{12}$

$\frac{4}{5} \times \frac{x}{12}$

$4(12) = 5(x)$

4. $\frac{1}{x+3} = \frac{3}{29}$

5. $\frac{5}{9} = \frac{5}{x-5}$

$\frac{5}{9} \times \frac{5}{x-5}$

$5(x-5) = 9(5)$

Distribute $5x - 25 = 45$

Add 25

then divide by 5.

6. $\frac{7}{3} = \frac{3x-1}{6}$

7. $\frac{3x-5}{4} = \frac{x}{2}$

$\frac{3x-5}{4} = \frac{x}{2}$

$2(3x-5) = 4x$

8. $\frac{x+2}{16} = \frac{7}{3}$

9. $\frac{30-x}{x} = \frac{3}{2}$

$\frac{30-x}{x} = \frac{3}{2}$

$2(30-x) = 3x$

10. $\frac{3}{4} = \frac{5+x}{8+x}$

11. $\frac{x+4}{3} = \frac{2x+3}{5}$

$\frac{x+4}{3} = \frac{2x+3}{5}$

$5(x+4) = 3(2x+3)$

12. $\frac{5}{5x+4} = \frac{2}{3}$

Distribute
Get x's on one side and numbers on other side.

13. George can drive from Columbus to Cincinnati, a distance of 110 miles, in two hours. At that same rate, how long will it take him to drive from Cincinnati to Lexington, a distance of 82.5 miles?

Columbus to Cin. $\frac{110}{82.5} = \frac{2}{x}$ hours
Cin. to Lexington hours

14. Bertha can drive 495 miles on 16.5 gallons of gasoline. How far can she drive on 11 gallons of gasoline?

5. After vacationing in Canada, Doris has $30.40 left in Canadian currency. How much money will she get when she xchanges this for U.S. currency? A Canadian dollar is worth $0.80 for each U.S. dollar.

Canadian money $\frac{30.40}{x} = \frac{1}{.80}$ Canadian dollar
US $ US dollar

OR

Canadian dollar $\frac{1}{30.40} = \frac{.80}{x}$ US dollar
canadian money US $

SOLVE for x