

Example: solve for x by using cross multiplication:

If  $\frac{x}{12} = \frac{7}{4}$ , next  $4 \cdot x = 7 \cdot 12$  and  $4x = 84$ , then  $x = 21$

Solve the following, rounding answers to the nearest tenth.

1.  $\frac{x}{8} = \frac{4}{3}$

2.  $\frac{2}{9} = \frac{x}{4}$

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

4.  $\frac{5}{8} = \frac{7}{x+3}$

5.  $\frac{4}{9} = \frac{x-6}{x+3}$

6.  $\frac{x+2}{x+3} = \frac{x-1}{x+5}$

7.  $\frac{x-4}{3} = \frac{x+1}{9}$

8.  $\frac{x}{4} = \frac{3x+3}{15}$

9.  $4 = \frac{24}{x-8}$

10.  $\frac{3x+12}{8} = 6$

11.  $\frac{8x}{5} = x+12$

12.  $\frac{x+5}{2x-1} = \frac{x-2}{2x-3}$

Scrambled answers: 4, -2.6, 20, 10.7, 8.2, 12, 3.3, 1.4, .9, 6.5, 13.2, 14

Solve for  $x$  by using the quadratic formula as shown below.

If  $ax^2 + bx + c = 0$ , then  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Example: If  $\frac{x+4}{3} = \frac{3}{x}$ ,

then  $x(x+4) = 3 \cdot 3$

so  $x^2 + 4x = 9$

and  $x^2 + 4x - 9 = 0$

For  $1x^2 + 4x - 9 = 0$

$a = 1$ ,  $b = 4$ ,  $c = -9$

$$x = \frac{-4 \pm \sqrt{4^2 - 4(1)(-9)}}{2(1)} = \frac{-4 \pm \sqrt{16+36}}{2} = \frac{-4 \pm \sqrt{52}}{2} = 1.6 \text{ or } -5.6$$

**Solve for  $x$ . Use quadratic formula where necessary. Round to the nearest tenth if necessary.**

1.  $\frac{2x+1}{3} = \frac{2}{x}$

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

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

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

Scrambled answers: 1.6, 2, 7.4, -2, 5, 1.5, 1.6, -3.6