

Solving proportions - Examples for pages 7.01

1.  $\frac{x}{5} = \frac{7}{15}$

$$\frac{15x}{15} = \frac{5 \cdot 7}{15}$$

$x = \frac{7}{3}$  or  $2.\bar{3}$

2.  $\frac{x+1}{5} = \frac{x}{4}$

$$4(x+1) = 5x$$
$$4x + 4 = 5x$$
$$\begin{array}{r} -4x \\ -4x \end{array}$$

$4 = x$

$x = 4$

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

$$(x+2)(x-7) = (x-3)(x+5)$$

	$x$	$+2$
$x$	$x^2$	$2x$
$-7$	$-7x$	$-14$

	$x$	$+5$
$x$	$x^2$	$5x$
$-3$	$-3x$	$-15$

$$x^2 - 5x - 14 = x^2 + 2x - 15$$

$$-5x - 14 = 2x - 15$$

$$-7x - 14 = -15$$

$$\frac{-7x}{-7} = \frac{-1}{-7}$$

$$x = \frac{1}{7}$$

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

$$(x+2)(2x-7) = (2x-3)(x-5)$$

$$2x^2 - 7x + 4x - 14 = 2x^2 - 10x - 3x + 15$$

$$-3x - 14 = -13x + 15$$

$$10x - 14 = 15$$

$$\frac{10x}{10} = \frac{29}{10}$$

$$x = \frac{29}{10} \text{ or } 2.9$$