

Simplify.

$$\sqrt{28}$$



$$\sqrt{4} \sqrt{7}$$

$$2\sqrt{7}$$

$$\sqrt{2 \cdot 7}$$

Simplify.

$$\sqrt{20}$$

↙ ↘

$$\sqrt{4} \sqrt{5}$$

$$2\sqrt{5}$$

Multiply.

$$\sqrt{2} \cdot \sqrt{8}$$

$$\sqrt{16}$$

$$4$$

Simplify.

$$\sqrt{\frac{16}{25}} = \frac{4}{5}$$

Solve for x.

$$(\sqrt{x+5})^2 = (\sqrt{x-1})^2$$

$$x+5 = x-1$$

+1 +1

$$\cancel{x} + 6 = \cancel{x}$$

$$6 \neq 0$$

no
solution

Solve for x.

$$\sqrt{x} - 5 = 2$$

$+5 \quad +5$

$$(\sqrt{x})^2 = (7)^2$$

$$\underline{\underline{x = 49}}$$

$$\sqrt{49} - 5 = 2$$

$$7 - 5 = 2$$

$$2 = 2$$

✓

Solve for a.

$$\left(\sqrt{4a+4}\right)^2 = (8)^2$$

$$\begin{array}{r} 4a+4 = 64 \\ -4 \quad -4 \end{array}$$

$$\frac{4a}{4} = \frac{60}{4}$$

$$a = 15$$

$$\sqrt{4(15)+4} = 8$$

$$\sqrt{60+4} = 8$$

$$\sqrt{64} = 8$$

$$8 = 8$$

✓

Solve for v.

$$\left(\sqrt{5v-10}\right)^2 = \left(\sqrt{3v+12}\right)^2$$

$$\begin{array}{r} 5v-10 = 3v+12 \\ -3v \quad -3v \quad +10 \quad +10 \\ \hline 2v = 22 \end{array}$$

$$\frac{2v}{2} = \frac{22}{2}$$

$$\underline{\underline{v=11}}$$

$$\begin{array}{l} \sqrt{5(11)-10} = \sqrt{3(11)+12} \\ \sqrt{55-10} = \sqrt{33+12} \\ \sqrt{45} = \sqrt{45} \end{array}$$

✓

Solve for s.

$$\sqrt{s+2} = \sqrt{6-s}$$

$$\begin{array}{r} s+2 = 6-s \\ +s-2 \quad -2+s \end{array}$$

$$2s = 4$$

$$s = 2$$

$$\sqrt{2+2} = \sqrt{6-2}$$

$$\sqrt{4} = \sqrt{4}$$

$$2 = 2$$

✓

Simplify and find the excluded value or values.

$$\frac{2x-8}{x^2-2x-8}$$
$$\frac{2(x-4)}{(x-4)(x+2)}$$
$$\frac{2}{x+2}$$

$x-4 \neq 0$
 $x \neq 4$

$x+2 \neq 0$
 $x \neq -2$

Simplify and find the excluded value or values.

$$\frac{32x^2}{72x^5}$$

$$\text{GCF: } 8x^2$$

$$\frac{4}{9x^3}$$

Simplify and find the excluded value or values.

$$\frac{6p-60}{3p-30}$$

$$\frac{6(p-10)}{3(p-10)}$$

$$\text{GCF: } 3(p-10)$$

$$\cancel{3}(p-10) \neq 0$$

$$\begin{array}{l} p-10 \neq 0 \\ +10 \quad +10 \\ p \neq 10 \end{array}$$

Simplify and find the excluded value or values.

$$\frac{2t-10}{t^2-25}$$

$$\frac{2(t-5)}{(t-5)(t+5)}$$

$$(t-5)(t+5) \neq 0$$

$$\frac{2}{t+5}$$

$$t-5 \neq 0 \quad t+5 \neq 0$$
$$t = 5, -5$$

$$\begin{aligned} &= \frac{y^2 + 10y + 16}{y^2 + 14y + 48} \end{aligned}$$

Simplify.

$$\frac{\cancel{(y+8)}(y+2)}{(y+6)\cancel{(y+8)}}$$

$$\frac{(y+2)}{(y+6)}$$

Multiply.

$$\frac{4}{5t} \cdot \frac{3}{t^7} = \frac{12}{5t^8}$$

Multiply.

$$\frac{X}{X-1} \cdot \frac{X+5}{X-6}$$

$$\frac{X(X+5)}{(X-1)(X-6)}$$

Divide and simplify.

$$\frac{2t+8}{5t} \div \frac{t+4}{10t}$$

$$\frac{2t+8}{5t} \cdot \frac{10t}{t+4}$$

$$\frac{\cancel{2}(t+4)}{\cancel{5}t} \cdot \frac{\cancel{10}t}{\cancel{t+4}} = \frac{4}{1} = 4$$

$$\frac{20}{5} = 4$$

Add the rational expressions.

$$\frac{8}{8+2} + \frac{6}{8+2}$$

$$\frac{14}{8+2}$$

Add the rational expressions.

$$\frac{x \cdot 9}{x \cdot 25x} + \frac{2 \cdot 5}{5x^2 \cdot 5}$$

$$\frac{9x}{25x^2} + \frac{10}{25x^2} = \frac{9x+10}{25x^2}$$

Subtract the rational expressions.

$$\frac{(x-3) \cdot 4x}{(x-3)(x-5)} - \frac{3x \cdot (x-5)}{(x-3)(x-5)}$$

$$\frac{\cancel{4x^2} - 12x - \cancel{3x^2} + 15x}{(x-5)(x-3)}$$

$$\frac{x^2 + 3x}{(x-5)(x-3)} - \frac{x(x+3)}{(x-5)(x-3)}$$