



$$\sqrt{18}$$

$$\sqrt{9} \sqrt{2}$$

$$3 \sqrt{2}$$

$$\sqrt{2} \cdot \sqrt{50}$$

$$\sqrt{100}$$

$$10$$

$$\sqrt{\frac{16}{81}}$$

$$\frac{4}{9}$$

$$\cancel{\sqrt{x-7}} = \cancel{\sqrt{x+1}}$$

$$x-7 = x+1$$

-1                      -1

$$\cancel{x} - 8 = \cancel{x}$$

$$-8 \neq 0$$

No Solution

$$(\sqrt{3a+4})^2 = (7)^2$$

$$3a+4 = 49$$

$$\begin{array}{r} -4 \quad -4 \\ \hline \end{array}$$

$$\begin{array}{r} 3a = 45 \\ \hline 3 \quad 3 \end{array}$$

$$a = 15$$

$$\sqrt{3(15)+4} = 7$$

$$\sqrt{45+4} = 7$$

$$\sqrt{49} = 7 \quad \checkmark$$

$$\sqrt{x} - 6 = 4$$

$$+6 \quad +6$$

$$(\sqrt{x})^2 = (10)^2$$

$$x = 100$$

$$\sqrt{100} - 6 = 4$$

$$10 - 6 = 4 \quad \checkmark$$

~~$\sqrt{x-6} = 4$~~

The image shows a handwritten equation  $\sqrt{x-6} = 4$  that has been crossed out with two green diagonal lines. Above the radical symbol, the number 6, the equals sign, and the number 4 are each marked with a small green superscript '2', indicating the steps for squaring both sides of the equation.



$$\frac{3x-21}{x^2-5x-14}$$

Factor

$$\frac{3(x-7)}{(x-7)(x+2)}$$

$$\frac{3}{x+2}$$

Excluded

$$(x-7)(x+2) \neq 0$$

$$x-7 \neq 0$$

$$x+2 \neq 0$$

$$x \neq 7$$

$$x \neq -2$$

$$\frac{54x^2}{63x^5}$$

GCF:  $9x^2$

$$\frac{6}{7x^3}$$

$63x^5 \neq 0$   
 $x \neq 0$

$$4p - 20$$

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$$8p - 40$$

$$\frac{4(p-5)}{8(p-5)}$$

$$\frac{1}{2}$$

$$8(p-5) \neq 0$$

$$p - 5 \neq 0$$
$$p \neq 5$$

$$(10m^3 + 10m^2 + 20m) \div 5m^2$$

$$\frac{10m^3}{5m^2} + \frac{10m^2}{5m^2} + \frac{20m}{5m^2}$$

$$2m + 2 + \frac{4}{m}$$

$$\frac{x^3}{25x} + \frac{7}{5x^2} \cdot \frac{5}{5}$$

$$\frac{3x + 35}{25x^2}$$

$$\frac{4}{x} + \frac{1}{x}$$

$$\frac{5}{x}$$

$$\frac{x \cdot 7}{x \cdot 121x} + \frac{6}{11x^2} \cdot \frac{11}{11}$$

$$\frac{7x + 66}{121x^2}$$

$$\frac{x}{x-4} \cdot \frac{x-7}{x-6}$$

$$\frac{x(x-7)}{(x-4)(x-6)}$$



$$\frac{2t+12}{5t} \cdot \frac{t+6}{10t}$$

$$\frac{2t+12}{5t} \cdot \frac{10t}{t+6}$$

$$\frac{\cancel{2(t+6)}}{\cancel{5t}} \cdot \frac{\cancel{10t}}{\cancel{t+6}}$$

4

$$\frac{6}{3+y} + \frac{y+4}{3+y}$$

$$\frac{y+10}{3+y}$$

$$\frac{x+1}{x^2+4x+3} + \frac{2}{x^2+4x+3}$$

$$\frac{x+3}{x^2+4x+3}$$

$$\frac{\cancel{x+3}}{\cancel{(x+3)}(x+1)}$$

$$\frac{1}{x+1}$$

$$x=3 \text{ vert.}$$

$$y=0 \text{ horiz.}$$

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

Find asymptotes