

Directions: You and your partner will work together to solve these problems. Partner A will solve the problems on the left and Partner B will solve the problems on the right. When you are done, your answers should match. If not, work together to find and correct your mistake.

Partner A	Partner B
<p>1) $3 -8x + 8 = 80$ $-8 - 8$ $\frac{3 -8x }{3} = \frac{72}{3}$ $-8x = 24$ $-8x = 24$ $-8x = -24$ $x = -3$ $x = 3$</p>	<p>1) $2 3x - 5 = 13$ $+5 +5$ $\frac{2 3x }{2} = \frac{18}{2}$ $3x = 9$ $\frac{3x}{3} = \frac{9}{3}$ $\frac{3x}{3} = \frac{-9}{3}$ $x = 3$ $x = -3$</p>
<p>2) $-(x+3)^2 + 5 = -4$ $-5 -3$ $\frac{-(x+3)^2}{-1} = \frac{-9}{-1}$ $(x+3)^2 = 9$ $x+3 = 3$ $x+3 = -3$ $x = 0$ $x = -6$</p>	<p>2) $3 x+3 - 13 = -4$ $+13 +13$ $\frac{3 x+3 }{3} = \frac{9}{3}$ $x+3 = 3$ $x+3 = 3$ $x+3 = -3$ $x = 0$ $x = -6$</p>
<p>3) $2x+3 = 3x$ $2x+3 = 3x$ $2x+3 = 3x$ $-2x -2x$ $-2x -2x$ $3 = x$ $3 = -5x$ $\frac{3}{-5} = \frac{-5x}{-5}$ $x = -3/5$ (False Solution)</p>	<p>3) $2\sqrt{2x-5} + 4 = 6$ $-4 -4$ $\frac{2\sqrt{2x-5}}{2} = \frac{2}{2}$ $\sqrt{2x-5} = 1$ $2x-5 = 1$ $2x = 6 \rightarrow x = 3$</p>
<p>4) $\sqrt{4x+12} - x = 0$ $(\sqrt{4x+12}) = (x)^2$ $4x+12 = x^2$ $0 = x^2 - 4x - 12$ $0 = (x-6)(x+2)$ $x = 6$ $x = -2$ (False solution)</p>	<p>4) $x - \sqrt{42-x} = 0$ $x = \sqrt{42-x}$ $x^2 = 42-x$ $x^2 + x - 42 = 0$ $(x+7)(x-6) = 0$ $x = -7$ $x = 6$</p>

#4 requires factoring/completing the square.

* Requiras factoring

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

$$\begin{aligned} & \overset{-2}{\underbrace{(\sqrt{x-1})^2}} = \overset{-2}{(x-1)^2} \\ & x-1 = (x-1)(x-1) \\ & x-1 = x^2 - 2x + 1 \\ & 0 = x^2 - 3x + 2 \\ & 0 = (x-2)(x-1) \\ & \boxed{x=2}, \boxed{x=1} \end{aligned}$$

5) $(x-3)^2 = 6 - 2x$

$$\begin{aligned} & (x-3)(x-3) = 6 - 2x \\ & x^2 - 6x + 9 = 6 - 2x \\ & x^2 - 4x + 3 = 0 \\ & (x-3)(x-1) = 0 \\ & \boxed{x=3}, \boxed{x=1} \end{aligned}$$

6) $\begin{cases} 3x + 5y = 50 \\ y - 2x = -3 \end{cases} \cdot 5 \rightarrow \begin{cases} 3x + 5y = 50 \\ -10x + 5y = -15 \end{cases}$

$$\frac{13x = 65}{13 \quad 13}$$

$$\boxed{x=5}$$

$$\begin{aligned} & 3(5) + 5y = 50 \\ & 15 + 5y = 50 \\ & -15 \quad -15 \\ & 5y = 35 \rightarrow \boxed{y=7} \end{aligned}$$

6) $\begin{cases} -2x + 6y = 32 \\ -5x + 3y = -4 \end{cases} \cdot 2 \rightarrow \begin{cases} -2x + 6y = 32 \\ -10x + 6y = -8 \end{cases}$

$$\frac{8x = 40}{6 \quad 8}$$

$$\boxed{x=5}$$

$$\begin{aligned} & -2(5) + 6y = 32 \\ & -10 + 6y = 32 \\ & +10 \quad +10 \\ & 6y = 42 \rightarrow \boxed{y=7} \end{aligned}$$

7) $7x^2 - 3 = 60$

$$+3 \quad +3$$

$$\frac{7x^2 = 63}{7 \quad 7}$$

$$x^2 = 9$$

$$\boxed{x=3} \quad \boxed{x=-3}$$

7) $10x^2 - 9 = 81$

$$+9 \quad +9$$

$$\frac{10x^2 = 90}{10 \quad 10}$$

$$x^2 = 9$$

$$\boxed{x=3} \quad \boxed{x=-3}$$

8) $\left(\frac{3}{2x} - 1 = \frac{1}{2x}\right) \cdot 2x$

$$\begin{aligned} & 3 - 2x = 1 \\ & -3 \quad -3 \end{aligned}$$

$$\frac{-2x = -2}{-2 \quad -2}$$

$$\boxed{x=1}$$

8) $\left(\frac{1}{2} = \frac{1}{3} + \frac{1}{6x}\right) \cdot 2$

$$3 \cdot \left(1 = \frac{2}{3} + \frac{2}{6x}\right) \cdot 3$$

$$6x \cdot \left(3 = 2 + \frac{6}{6x}\right) \cdot 6x$$

$$\begin{aligned} & 18x = 12x + 6 \\ & -12x \quad -12x \end{aligned}$$

$$\frac{6x = 6}{6 \quad 6} \rightarrow \boxed{x=1}$$