

Warm up:

Solve.

$$1) 2x + 5 = 13$$

$$\begin{array}{r} -5 \quad -5 \\ \hline 2x = 8 \\ \div 2 \quad \div 2 \\ \hline x = 4 \end{array}$$

$$2) 6 - \frac{x}{4} = 11$$

$$\begin{array}{r} -6 \quad -6 \\ \hline -4 \left(-\frac{x}{4} \right) = (5) (-4) \\ \hline x = -20 \end{array}$$

$$5x + 2 = 3x + 18$$



$$-3x$$

$$-3x$$

$$2x + 2 = 18$$

$$-2$$

$$-2$$

$$\frac{2}{2}x = \frac{16}{2}$$

$$x = 8$$

$$5x + 2 = 3x + 18$$

$$-5x$$

$$-5x$$

$$2 = -2x + 18$$

$$-18$$

$$-18$$

$$-16 = -2x$$

$$\frac{-16}{-2} = \frac{-2x}{-2}$$

$$8 = x$$

$$3p - 8 = 13 - 4p$$

$$+4p$$

$$+4p$$

$$7p - 8 = 13$$

$$+8 \quad +8$$

$$7p = 21$$

$$p = 3$$

$$\begin{array}{r} 4n + 5 = 6n + 7 \\ -4n \quad -4n \\ \hline -5 = 2n + 7 \\ -2 \quad -2 \\ \hline -7 = 2n \\ -1 \quad -1 \\ \hline -1 = n \end{array}$$

$$\begin{array}{r} 4x = 3x + 5 \\ -3x \quad -3x \\ \hline x = 5 \end{array}$$

$$\begin{array}{r} 4x = 3x + 5 \\ -4x \quad -4x \\ \hline 0 = -x + 5 \\ -5 \qquad \qquad -5 \\ \hline -5 = -x \\ \frac{-5}{-1} = \frac{-x}{-1} \\ \hline 5 = x \end{array}$$

$$x - (5x + 7) = 9 + 2x$$

$$\underline{x} - \underline{5x} - 7 = 9 + 2x$$

$$\begin{array}{r} -4x - 7 = 9 + 2x \\ +4x \qquad \qquad +4x \end{array}$$

$$\begin{array}{r} -7 = 9 + 6x \\ -9 \quad -9 \end{array}$$

$$\begin{array}{r} -16 = 6x \\ \frac{-16}{6} = \frac{6x}{6} \end{array}$$

$$\frac{-16}{6} = x$$

$$\frac{-16}{3} = x$$

$$1) 4n + 10 = 5n$$

$$2) 3s = s - 2$$

$$3) 71 - 5x = 9x - 12$$

$$4) 5p - 9 = 2p + 12$$

$$5) 3x = 27 - 15x$$

$$6) 3 + 4(p + 2) = 2p + 3(p + 4)$$

$$\begin{array}{r} 1) 4n + 10 = 5n \\ -4n \quad -4n \\ \hline 10 = n \end{array}$$

$$2) 3s = s - 2$$

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

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

$$\boxed{s = -1}$$

$$3) 71 - 5x = 9x - 12$$

$$\quad -9x -9x$$

$$\begin{array}{r} 71 - 14x = -12 \\ -71 \qquad \qquad -71 \\ \hline \end{array}$$

$$\begin{array}{r} -14x = -83 \\ \hline -14 \quad -14 \end{array}$$

$$x = \frac{83}{14}$$

$$4) 5p - 9 = 2p + 12$$

$$\begin{array}{r} \overset{-2p}{} \qquad \qquad \overset{-2p}{} \\ \hline 3p - 9 = 12 \\ \quad +9 \quad +9 \\ \hline 3p = 21 \\ \quad \underline{3} \quad \quad \underline{3} \\ \hline \textcircled{p = 7} \end{array}$$

$$\begin{array}{r} 5) \quad 3x = 27 - 15x \\ \quad +15x \quad \quad +15x \\ \hline \quad 18x = \frac{27}{18} \\ \hline x = \frac{27}{18} = \left(\frac{3}{2} \right) \end{array}$$

$$6) 3 + 4(p + 2) = 2p + 3(p + 4)$$

$$3 + 4p + 8 = 2p + 3p + 12$$

$$4p + 11 = 5p + 12$$

$$\begin{array}{r} -4p \qquad \qquad -4p \\ \hline 11 = p + 12 \\ -12 \qquad \qquad -12 \\ \hline -1 = p \end{array}$$