

Solve the inequality, if possible.

$$6k + 1 > 3(2k + 3)$$

all real numbers

$$\begin{array}{r} 6k + 1 > 6k + 9 \\ -6k \quad -6k \\ \hline 1 > 9 \text{ true!} \end{array}$$

$$5(a+2) < 5a - 14$$

no solution

$$\begin{array}{r} 5a + 10 < 5a - 14 \\ -5a \quad -5a \\ \hline -10 < -14 \text{ false!} \end{array}$$

A box of cat treats contains at least 50 treats. So far you have fed your cats 18 treats. If you want the box of treats to last 8 days, what are the possible average numbers of treats you can feed the cats per day?

$x = \#$ of treats per day

$$\begin{array}{r} 18 + 8x \leq 50 \\ -18 \quad -18 \\ \hline 8x \leq 32 \\ \frac{8x}{8} \leq \frac{32}{8} \end{array}$$

$x \leq 4$ up to 4 treats a day

SECTION 3.4

Solve the equation, if possible.

$$3(3x + 6) = 9(x + 2)$$

$$9x + 18 = 9x + 18$$

same, all numbers are solutions

$$7(h+4) = 2h + 17$$

$$\begin{array}{r} 7h + 28 = 2h + 17 \\ -2h \quad -2h \\ \hline 5h + 28 = 17 \end{array}$$

$$\begin{array}{r} 5h + 28 = 17 \\ +28 \quad +28 \\ \hline 5h = 45 \\ h = 9 \end{array}$$

$$8 + 2w = 6w + 8$$

$$+2w \quad +2w$$

$$\begin{array}{r} 8 = 6w + 8 \\ +8 \quad +8 \\ \hline 16 = 6w \end{array}$$

$$\frac{16}{6} = \frac{6w}{6} \quad w = 2$$

$$4g + 3 = 2(2g + 3)$$

$$\begin{array}{r} 4g + 3 = 4g + 6 \\ -4g \quad -4g \\ \hline 3 = 6 \end{array}$$

3 = 6 NOT TRUE!

NO SOLUTION

$$13 + 5x = 2x + 8$$

$$-2x \quad -2x$$

$$\begin{array}{r} 13 + 3x = -8 \\ -13 \quad -13 \\ \hline 3x = -21 \end{array}$$

$$\frac{3x}{3} = \frac{-21}{3} \quad x = -7$$

$$4x - 5 = \frac{1}{5}(5x + 20)$$

$$\frac{1}{5} \cdot 5 = 1 \quad \frac{1}{5} \cdot 20 = 4$$

$$\begin{array}{r} 4x - 5 = 1x + 4 \\ +5 \quad +5 \\ \hline 4x = 1x + 9 \end{array}$$

$$\begin{array}{r} 4x = 1x + 9 \\ -1x \quad -1x \\ \hline 3x = 9 \end{array}$$

$$x = 3$$

$$5x + 6 = 5(x + 1)$$

$$\begin{array}{r} 5x + 6 = 5x + 5 \\ -5x \quad -5x \\ \hline 6 = 5 \end{array}$$

6 = 5 NOT TRUE

NO SOLUTION

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

$$12x + 8 = 12x + 8 \text{ SAME!}$$

all real solutions!