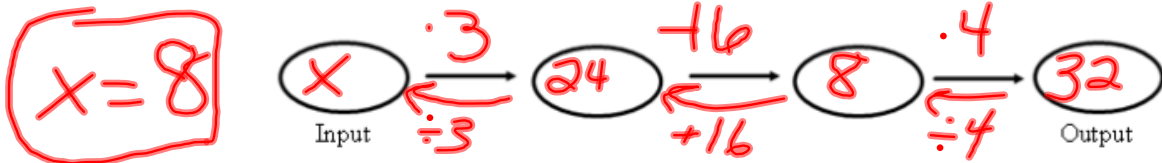
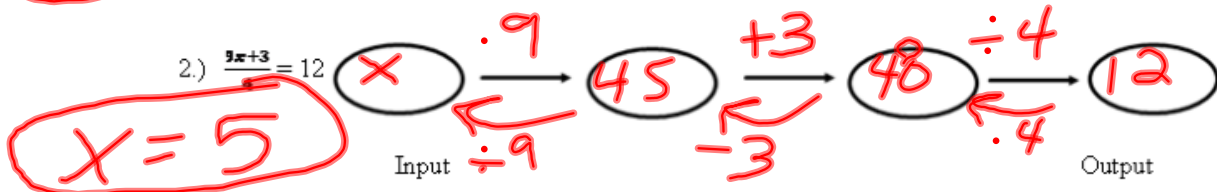


Use backtracking to find the solution of each equation.

1) $4(3x - 16) = 32$



2) $\frac{3x+3}{4} = 12$

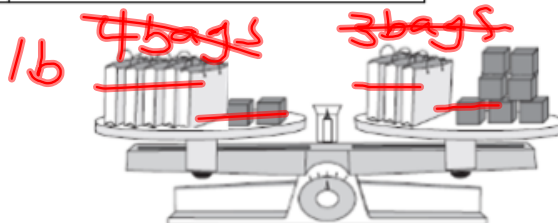


3) Use guess-check-and-improve to solve $3b + 4 = 4b - 2$.

Guess	$3b + 4$	$4b - 2$
6	$3 \cdot 6 + 4$ $18 + 4$	$4 \cdot 6 - 2$ $24 - 2$
	22	22

$b = 6$

4) Consider the balance puzzle



a. Write an equation to fit the puzzle. Let x represent the number of blocks in each bag.

$4b + 2 = 3b + 7$

b. Use the drawing to find the value of x .

$b = 5$

Solve each equation choosing one of these methods: *backtracking*, *guess-check-and-improve*, or *doing the same thing to both sides*.

5.) $5a - 12 = a + 3$

$$\begin{array}{r} -a \quad -a \\ 4a - 12 = 8 \\ +12 \quad +12 \\ \hline 4a = 20 \\ \frac{4a}{4} = \frac{20}{4} \\ a = 5 \end{array}$$

Solution: $a = 5$

6.) $4x + 3 = 8x - 18$

$$\begin{array}{r} -4x \quad -4x \\ 3 = 3x - 18 \\ +18 \quad +18 \\ \hline 21 = 3x \\ \frac{21}{3} = \frac{3x}{3} \\ 7 = x \end{array}$$

Solution: $x = 7$

7.) $5t - 3.5 = 4.9 + 2t$

$$\begin{array}{r} -2t \quad -2t \\ 3t - 3.5 = 4.9 \\ +3.5 \quad +3.5 \\ \hline 3t = 8.4 \\ \frac{3t}{3} = \frac{8.4}{3} \\ t = 2.8 \end{array}$$

Solution: $t = 2.8$

8.) $7m = 2(m+3)$

$$\begin{array}{r} 7m = 2m + 6 \\ -2m \quad -2m \\ \hline 5m = 6 \\ \frac{5m}{5} = \frac{6}{5} \\ m = 1.2 \end{array}$$

Solution: $m = 1.2$

9.) Five more than three times a number is sixteen less than twice the number. Write and solve an equation to find the number.

Equation: $5 + 3n = 2n - 16$

$$\begin{array}{r} 5 + 3n = 2n - 16 \\ -2n \quad -2n \\ \hline 5 + n = -16 \\ -5 \quad -5 \\ \hline n = -21 \end{array}$$

Solution: $n = -21$

10.) A man is 25 years older than his son. If you double the sum of their ages, you would get 178.

a. Write and solve an equation to find how old the boy is.

Equation: $2(s + s + 25) = 178$

$$\begin{array}{r} 2(2s + 25) = 178 \\ 4s + 50 = 178 \\ -50 \quad -50 \\ \hline 4s = 128 \\ \frac{4s}{4} = \frac{128}{4} \\ s = 32 \end{array}$$

Solution: $s = 32$

b. What the man's age?

man: 57

$$32 + 25 = 57$$

11.) Candice had 4 bags of marbles. The second bag has 2 more than the first. The third has twice as many as the first and the fourth bag contains six times as many as the first. If she has a total of 62 marbles, how many marbles are in each bag.

$$\begin{array}{cccccc} m & + & m+2 & + & 2m & + & 6m & = & 62 \\ \text{1st bag} & + & \text{2nd bag} & + & \text{3rd bag} & + & \text{4th bag} & = & \text{Total} \end{array}$$

Equation: $m + m + 2 + 2m + 6m = 62$ or $10m + 2 = 62$

1st: 6 2nd: 8 3rd: 12 4th: 36

$$\begin{array}{r} 10m + 2 = 62 \\ -2 \quad -2 \\ \hline 10m = 60 \\ \frac{10m}{10} = \frac{60}{10} \\ m = 6 \end{array}$$

Simplify each expression as much as possible

$$12.) x + 7(x - 4)$$

$$x + 7x - 28$$

$$8x - 28$$

$$13.) 12 - 2x + 8x - 5$$

$$= 6x + 7$$

14. Which equation has the same solution as $8x - 10 = 3(4x - 6)$? Circle one:

a. $4(x - 3) = 7x - 9$

$$4x - 12 = 7x - 9$$

$$-4 \neq 5$$

c. $5(2x - 3) = 8x + 11$

$$10x - 15 = 8x + 11$$

$$2x = 26$$

$$x = 13$$

$$8x - 10 = 3(4x - 6)$$

$$8x - 10 = 12x - 18$$

$$-8x \quad -8x$$

$$\frac{-10}{4} = \frac{4x + 18}{4}$$

$$-2.5 = x + 4.5$$

$$-7 = x$$

15.) Which inequality has the solution of $x < -6$?

Circle one:

a. $-2x > 12$

$$-2x > 12$$

$$x < -6$$

c. $3x + 2 > 2x - 8$

$$3x + 2 > 2x - 8$$

$$x > -10$$

b. $-2x > -12$

$$-2x > -12$$

$$x < 6$$

d. $x < 3x + 12$

$$x < 3x + 12$$

$$-2x < 12$$

$$x > -6$$

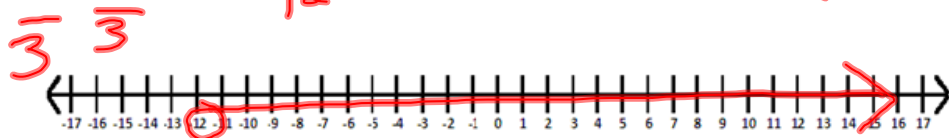
Graph.



Solve and graph.

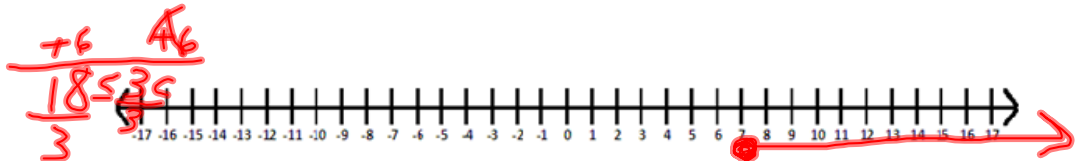
17.) $-36 < 3w$

$-12 < w$ or $w > -12$ Solution: $w > -12$



18.) $12 \leq 3c - 6$

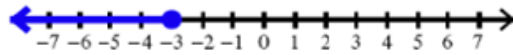
Solution: _____



$6 \leq c$ or $c \geq 6$

Write each inequality.

25.) $x \leq -3$



26.) $x > 3$

