

*COPY DOWN THE PROBLEMS

1. The sum of Avery and Becca's ages is 58 years. Avery is two more than 3 times the age of Becca. Find their ages.

$b = \text{Becca's age}$ 14 yrs old
 $3b + 2 = \text{Avery's age}$ 44 yrs old

$$3(14) + 2 = 44$$

$$\textcircled{b} + 3\textcircled{b} + 2 = 58$$

$$\begin{array}{r} 4b + 2 = 58 \\ -2 \quad -2 \\ \hline 4b = 56 \\ \frac{4}{4} \quad \frac{56}{4} \\ b = 14 \end{array}$$

2. Five times the sum of a number and 16 is 65. Find the number.

$x = \text{a number}$

$$5(x + 16) = 65$$

$$\begin{array}{r} 5x + 80 = 65 \\ -80 \quad -80 \\ \hline 5x = -15 \\ \frac{5}{5} \quad \frac{-15}{5} \quad \boxed{x = -3} \end{array}$$

3. Solve: $x - 15 = 4$

$$\begin{array}{r} x - 15 = 4 \\ +15 \quad +15 \\ \hline \boxed{x = 19} \end{array}$$

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Inequalities

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Inequality Symbols

$<$ Less than

$>$ Greater than

\leq Less than or equal to

\geq Greater than or equal to

Solving Multi-Step Inequalities

To solve:

Follow the same steps for solving multi-step equations.

***Special Rule for Inequalities:

When multiplying or dividing by a NEGATIVE flip the inequality symbol

SOLVE

DCS

$$1. 4(x+3) > -24$$

$$4x + 12 > -24$$

$$\frac{4x}{4} > \frac{-36}{4}$$

$$x > -9$$

3, 11, 0, -2

$$2. x - 3(x+2) > 4$$

$$x - 3x - 6 > 4$$

$$-2x + 6 > 4$$

$$\frac{-2x}{-2} > \frac{10}{-2}$$

$$x < -5$$

-10, -7, -20

4. $-8(x-1) - x \leq -28$

$$\textcircled{-8x} + 8 \textcircled{-x} \leq -28$$

$$\begin{array}{r} -9x + 8 \leq -28 \\ \underline{-8 \quad -8} \end{array}$$

$$\begin{array}{r} -9x \leq -36 \\ \underline{-9 \quad -9} \end{array}$$

$$\boxed{x \geq 4}$$

4, 30,

5, 12, 100

$$\boxed{5. \quad 6x + 1 < 9 - 2x}$$

+2x

+2x

$$8x + 1 < 9$$

$$\frac{8x}{8} < \frac{8}{8}$$

$$\boxed{x < 1}$$

-3, -10, 0,
-1, -5

$$\overline{7. \quad 3 - (2x - 7) \leq 34 - 6x}$$

$$\textcircled{3} -2x + 7 \leq 34 - 6x$$

$$10 - 2x \leq 34 - 6x$$

+6x

+6x

-3

$$10 + 4x \leq 34$$

-10

-10

6, 4, 0

$$\frac{4x}{4} \leq \frac{24}{4}$$

$$\boxed{x \leq 6}$$

8. $-3(x+2) - 3x < 2x + 18$ D

$-3x - 6 - 3x < 2x + 18$ C

$-6x - 6 < 2x + 18$

$-8x - 6 < 18$

$-8x < 24$

$x > -3$

5, -2, 6,
10, 0

9. $5x - 3(x+6) \geq 8 - (x-7)$ D

$5x - 3x - 18 \geq 8 - x + 7$ C

$2x - 18 \geq 15 - x$

$3x - 18 \geq 15$

$3x \geq 33$

$x \geq 11$

11, 12, 13,
20, 100,
21

D 10. $-(3x+3) - 2x > -4(x-2) - 2$

C $-3x - 3 - 2x > -4x + 8 - 2$

$-5x - 3 > -4x + 6$

$-x - 3 > 6$

$-x > 9$

$x < -9$

$x < -9$

Pumpkin Smash Bingo

