

Solve the following. For inequalities provide the graph. Show all work and circle your final answer.

1.) $\frac{1}{3}(6x + 3) = 3(x - 3)$

2.) $\frac{2a}{5} - 3 = -10$

3.) $4(x - 2) \geq -3(2x - 4)$

4.) $1 - 3r \geq 10$ *or* $6r + 2 \geq -10$



5.) $-6 \leq 2x + 8 < 0$



Simplify each.

6.) $(-5)^2 - 2x + x^2$ when $x = 3$

7.) $-3x - 5 \cdot 2$ if $x = -6$

8.) $(6 - 5)^3 + 14 \div (2 + 5) =$

9.) $2 + (3^2 - 4) \cdot 6 \div 3 =$

10.) Solve the proportion. $\frac{x-2}{3} = \frac{x+7}{4}$

11.) Write the equation of the line that passes through the point $(1, -2)$ and has a slope of 2.

12.) Write the equation of the line in standard form that passes through the points $(3, -4)$ and $(0, 5)$.

13.) Write the equation of the line in slope-intercept form that passes through the points $(2, 4)$ and is perpendicular to the line $y + \frac{1}{4}x = 2$

14.) Are the following lines $l_1: 3y - 2x = -3$ and $l_2: 4y = 6x + 28$ parallel, perpendicular, or neither? EXPLAIN.

Given $f(x) = x^2 + 2$ and $g(x) = 2x - 1$ find the following:

15.) $f(-2)$

16.) $g(-3)$

17.) $g(x) = 7$

Let $A = \{x \mid x \in W, -3 \leq x \leq 3\}$ $B = \{x \mid x \in Z, -2 \leq x \leq 4\}$

$C = \{x \mid x \in N, x \leq 5\}$ find the following.

You may use the venn diagram provided if desired.

18.) $A \cap C =$

19.) $B' =$

20.) $A \cup B =$

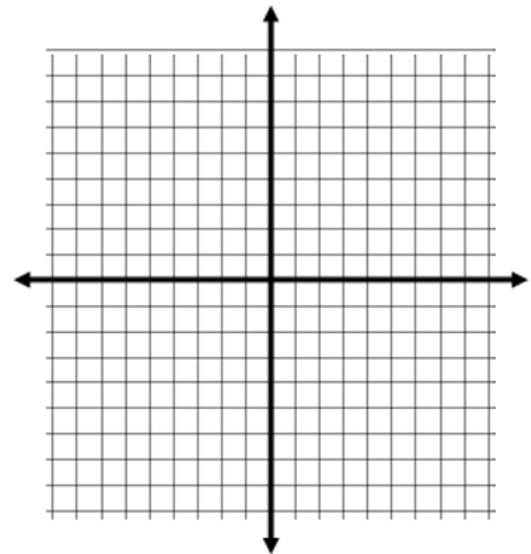
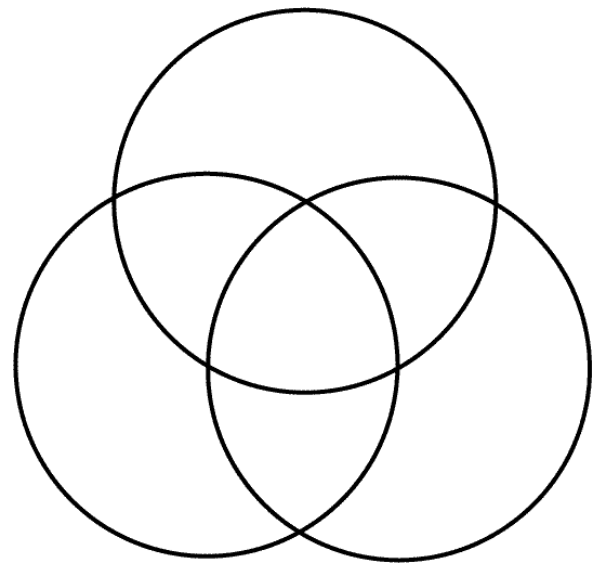
21.) $(B \cup C)' =$

22.) A line has a slope of $\frac{3}{4}$ and passes through the points $(7, -2)$ and $(x, -8)$. Find the missing value.

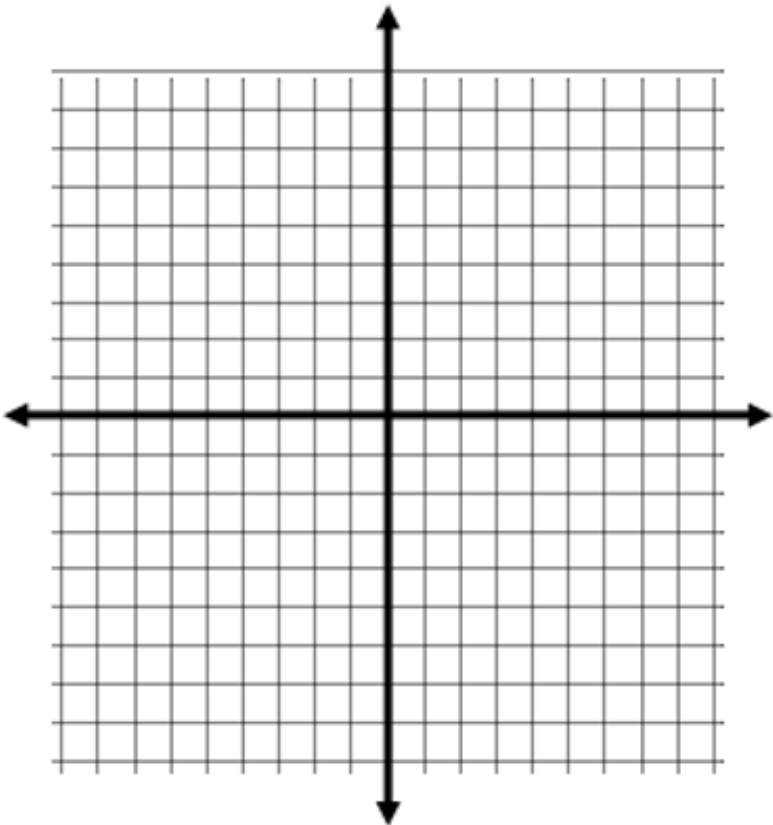
23.) Graph $2x + 3y = 12$ by finding, plotting, and connecting the x and y intercepts. Use a ruler to create the line.

$x - intercept (\quad , \quad)$

$y - intercept (\quad , \quad)$



24.) Graph $4x - 4y = 12$ by making a chart of x and y values. Show all work. Plot at least 4 points. Use a ruler to create the line.



25.) Graph $3y - 2x = -12$ using the slope and y-intercept. Plot at least 4 points. Use a ruler to create the line.

