Key

Show work for full credit. Circle, box, or highlight your answers.

Questions are worth 5 points each; the total will be converted to an equivalent score out of 100.

Identify the slope of the line passing through the given points

1. (3, 5), (-1, 8)

$$\frac{y_2 - y_1}{x_2 - x_1} \Rightarrow \frac{8 - 5}{-1 - 3} = \frac{3}{-4} = \boxed{-\frac{3}{4}}$$

Write an equation in slope-intercept form for each line described below

2. m = −3; passes through (−3, 5)

$$y - 5 = -3(x + 3)$$
$$y - 5 = -3x - 9$$
$$\boxed{y = -3x - 4}$$

3. line parallel to 2x − 3y = 9 passing through the point (−1, 4)

$$-A/B \Rightarrow -2/-3 = 2/3$$

$$m = 2/3$$

$$\left. \begin{array}{l} \\ pt; \ (-1, 4) \end{array} \right\} \rightarrow \ y - 4 = \frac{2}{3}(x + 1)$$

$$3y - 12 = 2x + 2$$
$$3y = 2x + 14$$

-more-

$$\boxed{y = \frac{2}{3}x + \frac{14}{3}}$$

For #4-6, a line passes through the points (−3, 5) and (−2, 1).

$$\frac{1-5}{-2+3} = \frac{-4}{1}$$

4. Write the equation for this line in point-slope form

$m = -4$

pt: $(-3, 5)$

$y - 5 = -4(x+3)$

or

$y - 1 = -4(x+2)$

5. Convert the equation for this line to slope-intercept form

$y - 5 = -4(x+3)$

$y - 5 = -4x - 12$

$y = -4x - 7$

6. Convert the equation for this line to standard form

$4x + y = -7$

For #7-8, write the transformation of the graph of y = f(x) that has been ...

7. translated 4 units right, and 5 units down $y = f(x-4) - 5$

8. translated 3 units left, reflected across the x-axis $y = -f(x+3)$

9. Write the equation for the absolute value function with a vertex at (−3, 4) and

a steepness factor of −3. $y = -3|x+3| + 4$

10. Without graphing, identify the vertex and axis of symmetry for the equation
y = 4|x + 5| − 6

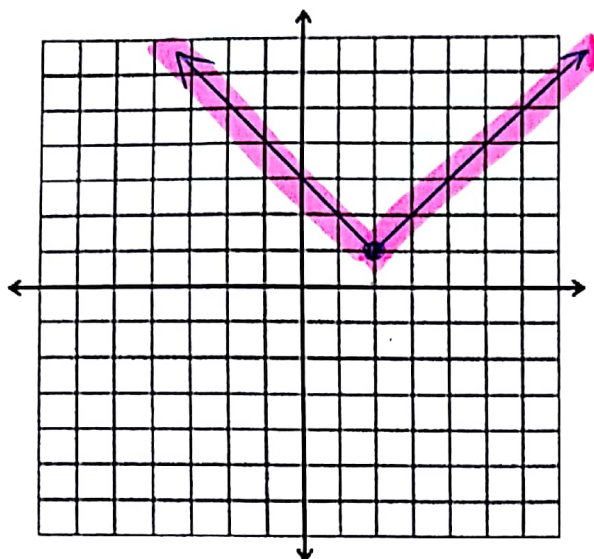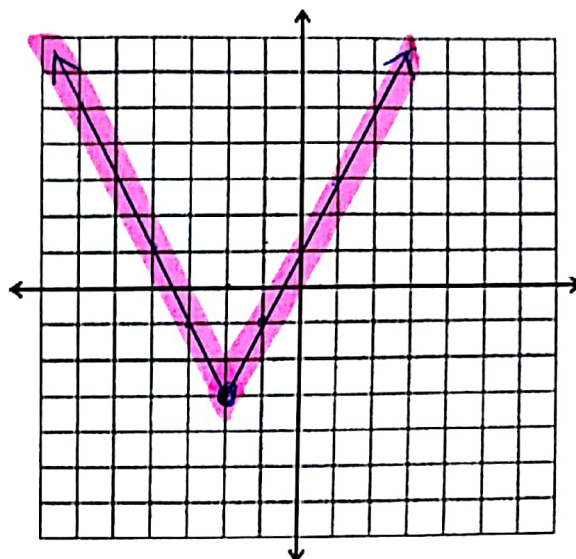vertex: $(-5, -6)$ axis of symmetry: $x = -5$

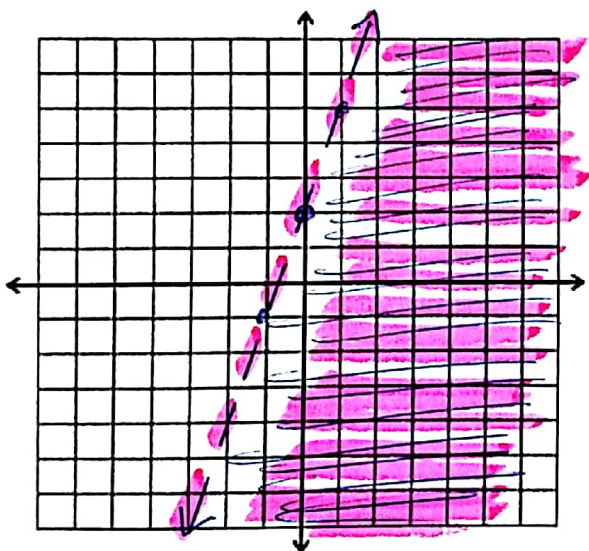-more-

Graph each inequality

11. $f(x) = |x - 2| + 1$

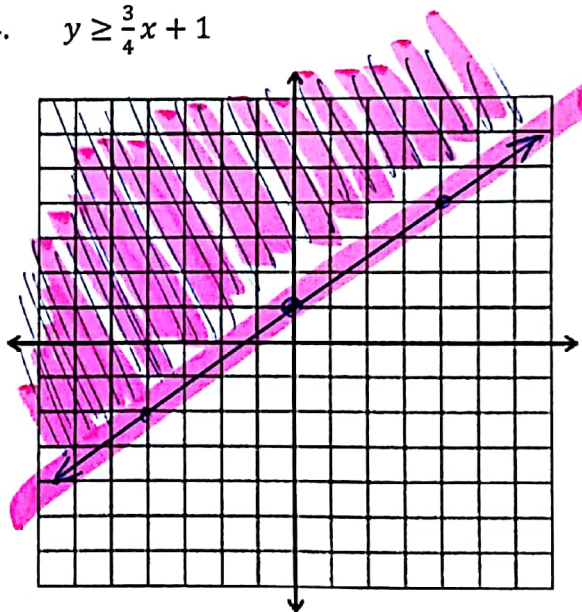12. $f(x) = 2|x + 2| - 3$

13. $y < 3x + 2$

14. $y \geq \dfrac{3}{4}x + 1$

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