

Name: Selected Answers

Block: \_\_\_\_\_  
Date: \_\_\_\_\_

Homework: Unit 1 – Foundations

Honors PreCalculus

All homework must be completed NEATLY on your own paper.

Homework 1.1: Linear Equations Review

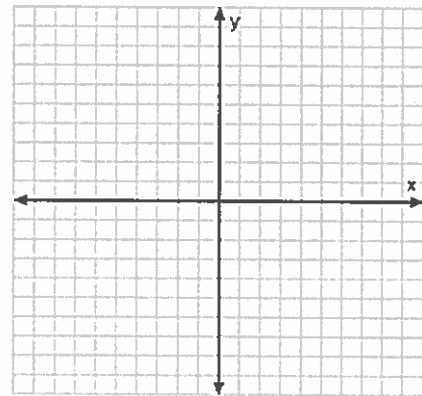
Use the equation,  $3x - 4y + 24 = 0$ , to answer questions 1-3.

1. Write the linear equation in slope-intercept form.

$$y = \frac{3}{4}x + 6$$

2. Identify the slope and the y-intercept.

3. Sketch the graph of the line. Be sure to label your axes.



Let  $A(-7, 4)$  and  $B(5, -12)$  be points in the plane.

4. Find the equation of the line that passes through points A and B in point-slope form.

$$y - 4 = -\frac{4}{3}(x + 7)$$

5. Find the equation of the line parallel to AB passing through point C (1, 1) in standard form.

$$4x + 3y = 7$$

Find an equation for the line with the given properties in slope-intercept form.

6. Passing through  $(-2, 3)$  and perpendicular to the line  $2x + 6y = 17$ .

$$y = 3x + 9$$

7. Having x-intercept of  $-3$  and y-intercept of  $12$ .

$$y = 4x + 12$$

8. Find an equation of a line parallel to the line  $x - 2y = -5$  containing the point  $(\frac{3}{4}, -\frac{5}{4})$ .

$$y = \frac{1}{2}x - \frac{13}{8}$$

A wooden access ramp is being built to reach a platform that sits 30 inches above the floor. The ramp drops 2 inches for every 25-inch run.

← slope

↑ y-int

9. Write a linear equation that relates the height  $h$  (in inches) of the ramp above the floor to the horizontal distance  $d$  (in inches) from the platform.

10. Find and interpret the  $d$ -intercept of your equation.

$$d = 375 \quad (375, 0)$$

11. Design requirements stipulate that the maximum run be 30 feet and the maximum slope be a drop of 1 inch for every 12 inches of run. Will this ramp meet the requirements? Explain your answer.