Algebra I

5.4-5.5 Quiz Review

Slope-intercept equations
Point-slope equations

NAME:_____

DATE:_____ HOUR:____

Read Question 1 and its solution. Then, write each equation in Questions 2 through 4 in slope-intercept form and identify the slope and y-intercept.

1. Write the equation $y + 2x = 1$ in slope-intercept form. Then identify the slope and y-intercept.

   Step 1 A linear equation in slope-intercept form is $y = mx + b$, where m is the slope of the line and b is the y-intercept. Solve for y to get $y = -2x + 1$.

   Step 2 $y = -2x + 1$, so the slope m is -2 and the y-intercept b is 1.

2. $y = -3x + 2$ –10

   _____

   m = ____

   b = ____

3. $y - 7 = 5x$

   _____

   m = ____

   b = ____

4. $x = y + 3$

   _____

   m = ____

   b = ____

Use the problem scenario below to complete Questions 5 through 7.

Lindsay is a member of her high school cross-country team. She wants to reach the goal of running 500 miles over the summer. She has already run 220 miles and is running about 20 miles per week.

5. Write an equation that gives the total distance that Lindsay has run in terms of the number of weeks passed after the first 220 miles were completed.

6. Identify the slope and y-intercept of the equation in Question 5.

7. Describe how you would graph your line in slope-intercept form.

Read Question 1 and its solution. Then, in Questions 2 through 5, write an equation of the line that passes through the given point and has the given slope. Then write each equation in slope-intercept form.

1. Write an equation of the line that passes through (3, –1) and has a slope of 5. Then write the equation in slope-intercept form.

Step 1 $y - y_1 = m(x - x_1)$ Point-slope form

$y - (-1) = 5(x - 3)$ Substitute 3 for x_1, –1 for y_1 and 5 for m.

$y + 1 = 5x - 15$ Simplify.

$-1 \quad -1$

Step 2 $y = 5x - 16$ Slope-intercept form

2. Passes through (–6, 0) and has slope –2

3. Passes through (9, 7) and has slope $\frac{1}{3}$

4. Passes through (–1, –8) and has slope 4

5. Passes through (2, –5) and has slope $-\frac{3}{2}$

Read Question 6 and its solution. Then, in Questions 7 through 8, write an equation of the line that passes through the given set of points. Then write each equation in slope-intercept form.

6. Write an equation of the line that passes through (–1, –3) and (2, 3). Then write the equation in slope-intercept form.

Step 1 Find the slope of the line.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3 - (-3)}{2 - (-1)} = \frac{6}{3} = 2$$

Step 2 $y - y_1 = m(x - x_1)$ Point-slope form

$y - 3 = 2(x - 2)$ Substitute 2 for x_1, 3 for y_1 and 2 for m.

$y - 3 = 2x - 4$ Simplify.

$+3 \quad +3$

Step 3 $y = 2x - 1$ Slope-intercept form

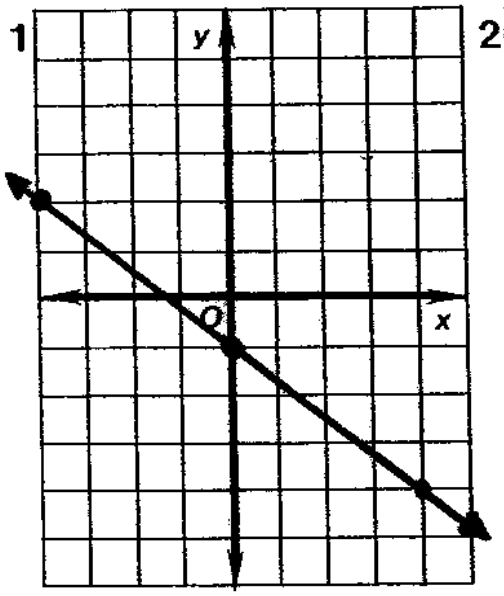
7. Passes through (–6, 7) and (3, –11)

8. Passes through (2, –2) and (–4, –5)

Write the equation of the line from its graph.

$y = mx + b$

1



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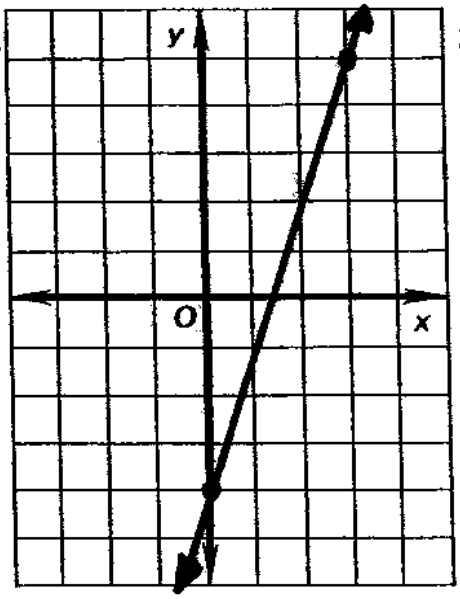

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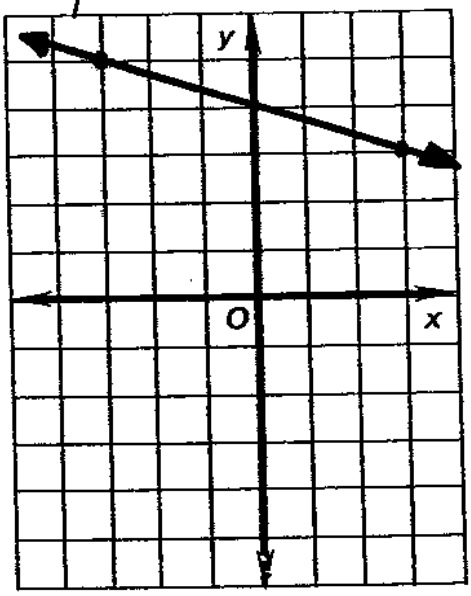
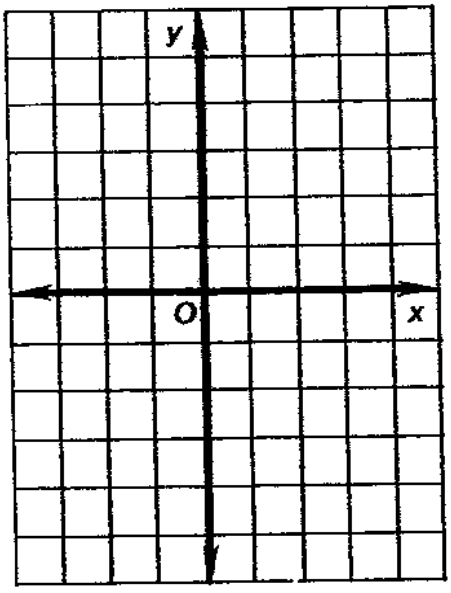


① _____ ② _____ ③ _____

Draw a graph of the equation by using the slope and y-intercept

④ $y = \frac{2}{3}x + 2$ ⑤ $y = -3x - 2$ ⑥ $y = -\frac{1}{5}x$

4



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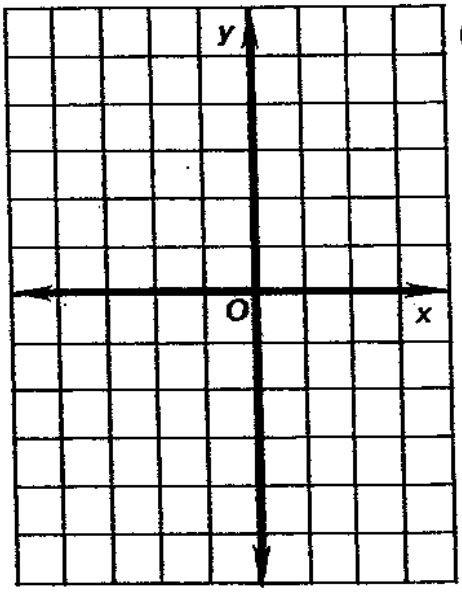

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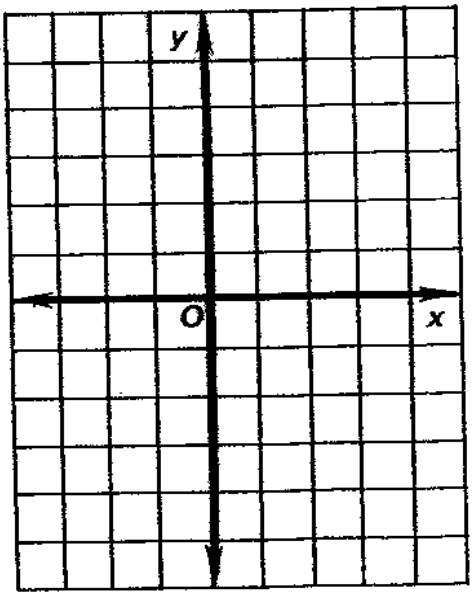

Write the equation of a line in Slope-intercept form that has a slope of $-\frac{5}{9}$ and passes through the point (18, 7). Show all work.

$y - \_\_ = \_\_(x - \_\_)$

$y =$

Write the equation of the line that passes through the points (-1, -5) and (-2, -13) in Slope-intercept Form. Show all work.

$m =$

$y - \_\_ = \_\_(x - \_\_)$

$y =$