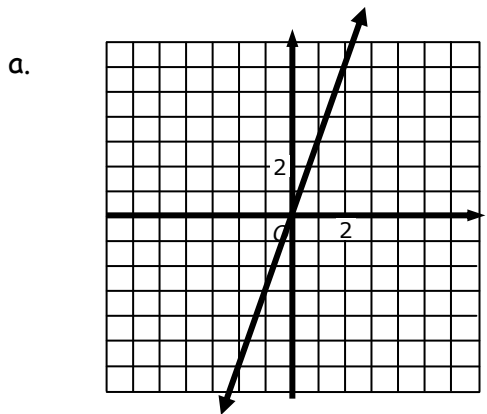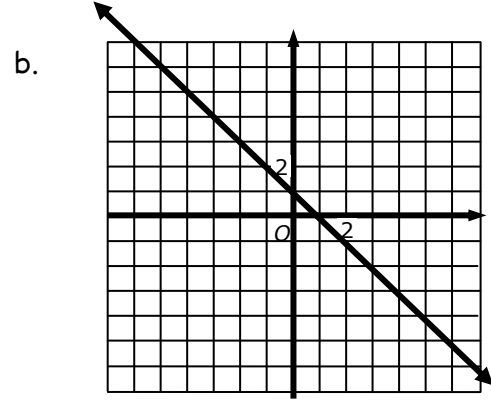# Linear Equations

_____
name

1. Find the slope, y-intercept, and equation of the line.
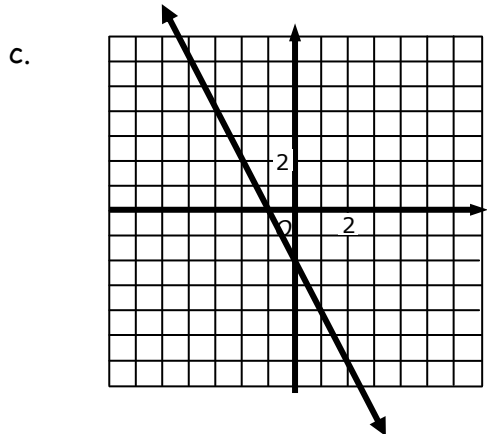
a.

slope _____ y-intercept _____
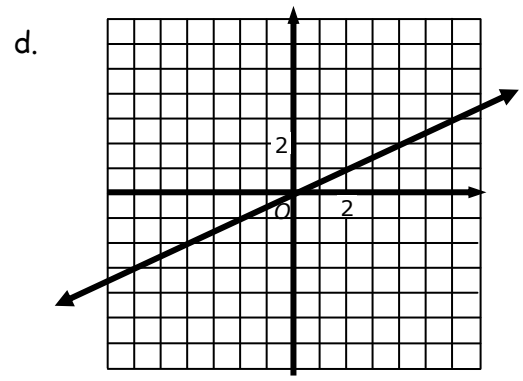
equation_____

b.

slope _____ y-intercept _____

equation_____

c.

slope _____ y-intercept _____

equation_____

d.

slope _____ y-intercept _____

equation_____

2. Calculate the slope of the following:

a. (-3, 7) and (-4, -9)   m = _____   b. (5, -8) and (-7, -8) m = _____

3. Calculate the equation of the line for the following:

a.

x	1	2	3	4	5
y	-7	-5	-3	-1	1

b.

x	2	4	6	8	10
y	-2	-4	-6	-8	-10

c. (3, 6) and (-1, 6)   d. (-2, 4) and y-intercept of -6.

e. Slope of the line is 5 and   f. Slope of the line is $-\dfrac{1}{2}$ and it passes

it passes through the point (-3 , 1).   through the point (1 , 2).

4. Identify the m and b in each linear equation.

a.   y = 4x - 5   m = _____   b = _____
b.   y = 9 + x   m = _____   b = _____
c.   y = 8   m = _____   b = _____
d.   y = 18x   m = _____   b = _____
e.   y = -3x - 7   m = _____   b = _____
f.   y = 2 – 6x   m = _____   b = _____

5. Use the graph to answer the following:

The graph of the function $y = \dfrac{3}{2}x$ is shown.

    a. If the line is translated 3 units up,
what equation will best describe
the new line?   _____

    b. If the line is translated 5 units down,
what equation will best describe
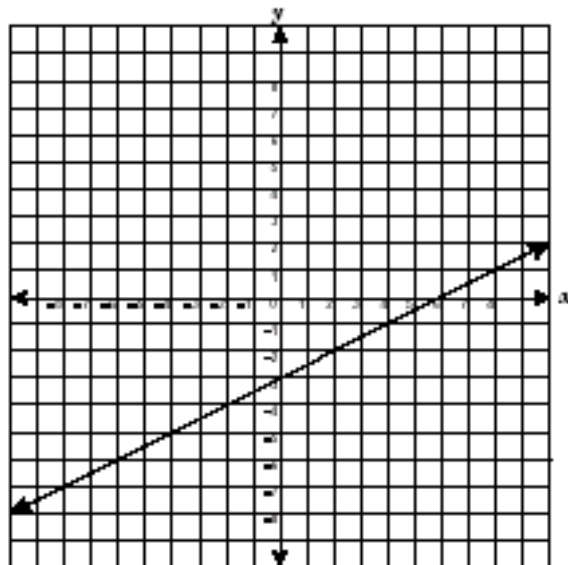the new line?   _____
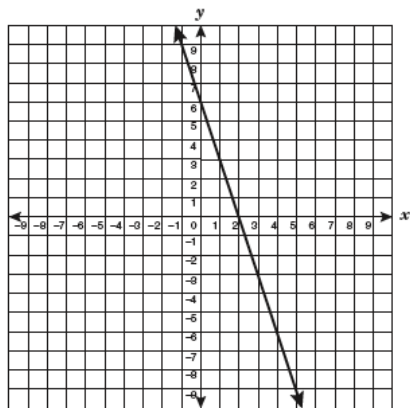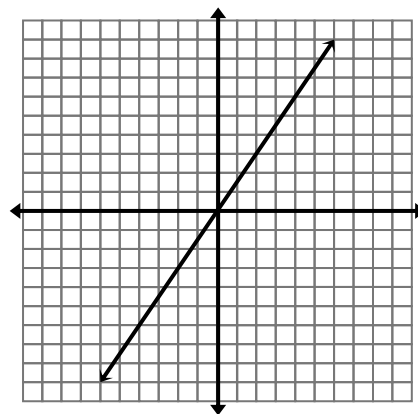
6. The graph of the function $y = -3x + 6$ is shown.

    a. If the line is translated 3 units up,
what equation will best describe the new
line?

_____

    b. If the line is translated 7 units down,
what equation will best describe the new
line?

_____

7. Graphed is the line for the equation
    $y = \frac{1}{2}x - 3$.

a. Write and graph the equation of $y = \frac{1}{2}x - 3$ translated 5 units up. Label the line.
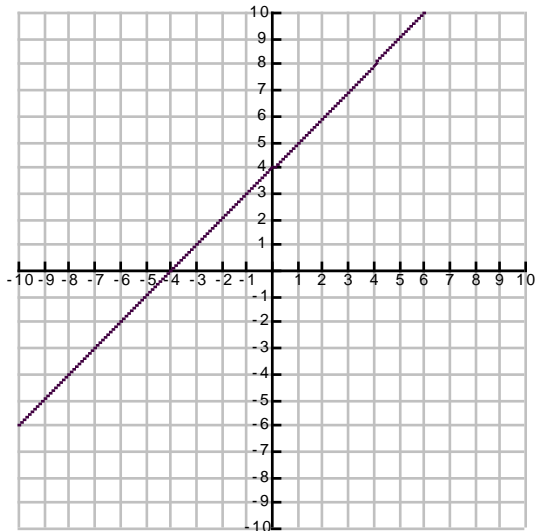
y = _____ .

b. Does the x-intercept increase or decrease? _____

c. Write and graph the equation of $y = \frac{1}{2}x - 3$ translated 4 units down. Label the line.

y = _____ .

d. Does the x-intercept increase or decrease? _____

8. Graphed is the line for the equation $y = x + 4$.

a. Write and graph the equation of the line resulting by doubling the slope and subtracting 7 from the y-intercept. Label the line.
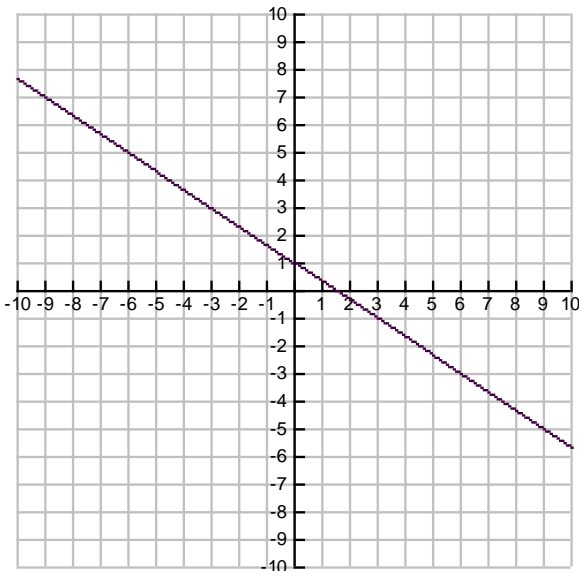
y = _____ .

b. What happened to the x-intercept?

increase or decrease?

c. What happened to the y-intercept?

increase or decrease?

9. Graphed is the line for the equation $y = -\frac{2}{3}x + 1$.

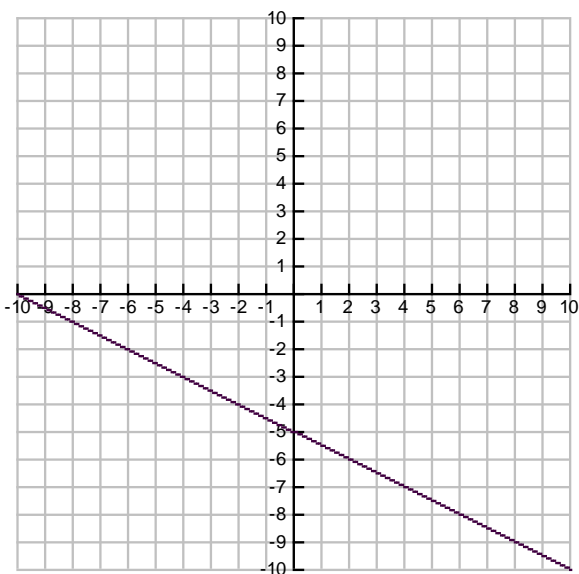a. Write and graph the equation of $y = -\frac{2}{3}x + 1$ translated 4 units up. Label the line.

$y = $ _____.

b. Write and graph the equation of the line resulting from multiplying the slope by -3 and adding 4 to the y-intercept. Label the line.

$y = $ _____.

c. Does the x-intercept increase or decrease? _____

d. Does the y-intercept increase or decrease? _____

10. Graphed is the line for the equation $y = -\frac{1}{2}x - 5$.

a. Write and graph the equation of $y = -\frac{1}{2}x - 5$ translated 9 units up. Label the line.

$y = $ _____.

b. What happens to the x-intercept?

c. Write and graph the equation of the line resulting from halving the slope and adding 4 to the y-intercept. Label the line.

$y = $ _____.

d. What happened to the slope of the new line (steeper or less steep)? _____