Math 60, Sections 4.5 and 4.6 Class Prep Name:_____

Section 4.5 Slope-Intercept Form

Slope and y-intercept in context

1. At the Mad Genius Escape Room on Hawthorne, the cost is $30 per person. If you want the room to be private for your party the cost is $27 plus $24 per person.
Source: https://www.madgeniusescapes.com/faq

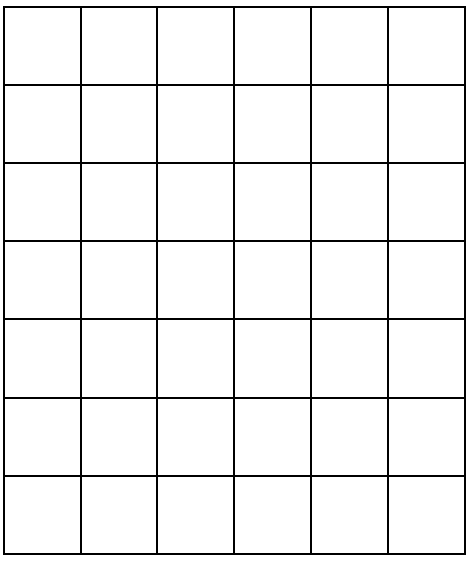
Write an equation for the total cost, y, in terms of the number of people in your party, x.

a. For a private room.

What is the rate of change or slope?

What is the starting value or y-intercept?

Graph this linear equation:

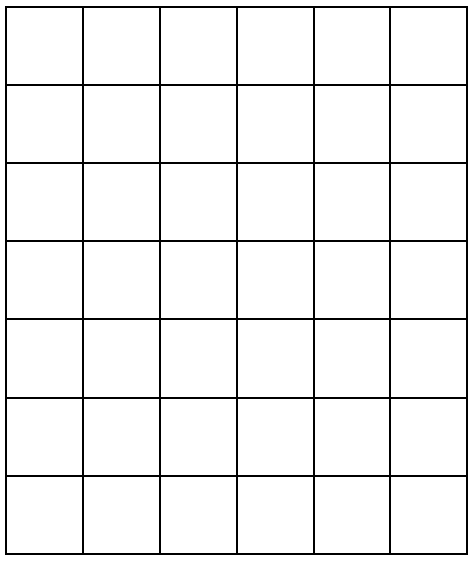


b. For a non-private room.

What is the rate of change or slope?

What is the starting value or y-intercept?

Graph this linear equation:



Slope-Intercept Form of a Linear Equation: $y = mx + b$

2. Identify the slope and the y-intercept of each line below.

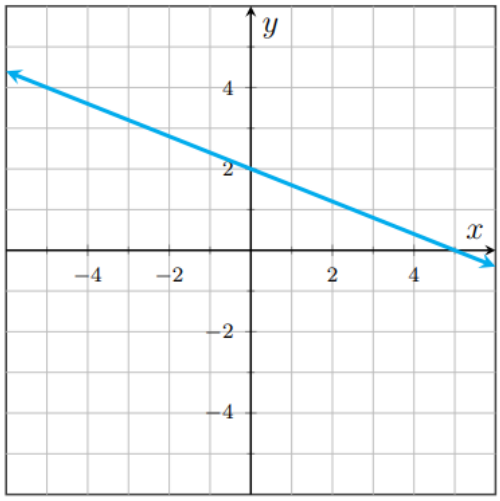
a. $y = -9x + 4$

b. $y = \frac{2}{3}x - 6$

c. $y = -x + 3$

3. Write the equation of each line by finding the slope and y -intercept from the graph.

a.

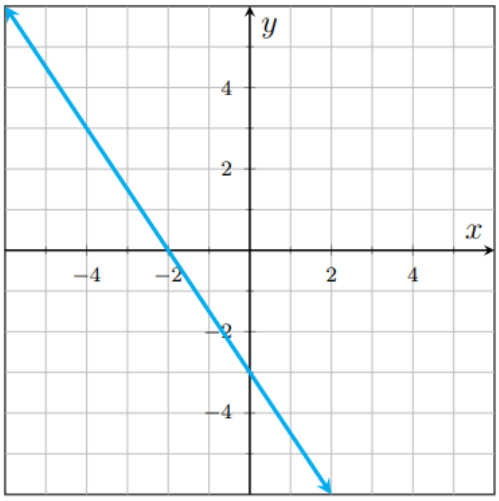


Slope:

y-intercept

Equation:

b.



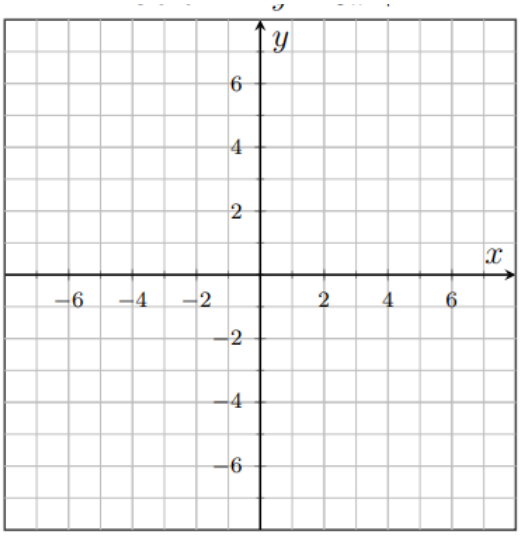
Slope:

y-intercept:

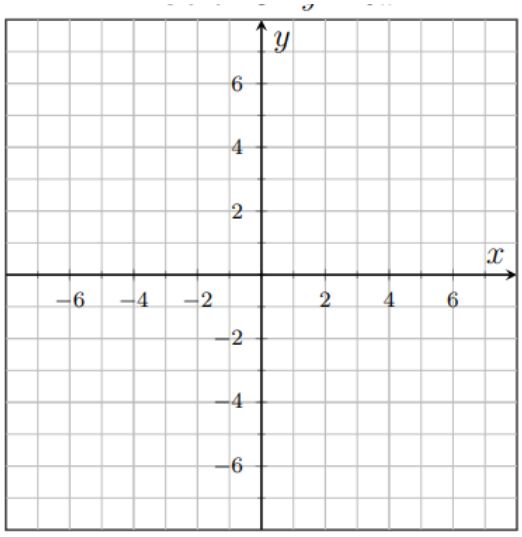
Equation:

4. Graph each equation by plotting the y -intercept and then using the slope to plot additional points.

a. $y = 3x + 1$



b. $y = -\frac{2}{3}x + 6$



Section 4.6 Point-Slope Form

The Point-Slope Form of a line with slope m that passes through the point (x_1, y_1) is $y = m(x - x_1) + y_1$

5. Identify the slope and a point that is on each line below.

a. $y = 4(x-1)+5$ b. $y = -\frac{1}{3}(x+2)-4$ c. $y = -9(x+1)-10$

6. Find the equation of the line with a slope of -2 that passes through the point $(3,-5)$. Then simplify the equation to slope-intercept form.

7. Find the equation of the line that passes through the points $(2,0)$ and $(4,2)$. First write the equation in point-slope form, then simplify the equation to slope-intercept form.

8. A bakery owner has learned that by pricing pastries at $2.50 each, sales reach 100 pastries per day. If they price them at $3.50 each, they only sell 60 per day. Let y be the number of pastries the bakery sells per day at x dollars each. Write a linear equation that models the number of pastries sold per day when the price is x dollars each.