

Functions and Graphs Worksheet 2
Writing Linear Equations

1. Write an equation in both slope-intercept form and standard form that fits each of the following statements.

(a) Having a slope of 3 and a y -intercept of $(0, -5)$.

(b) Having a slope of $-\frac{2}{3}$ and a y -intercept of $(0, 6)$.

(c) Having a slope of 2 and passing through the point $(1, -4)$.

(d) Having a slope of $\frac{1}{2}$ and passing through the point $(-1, -7)$.

(e) Having zero slope and passing through the point $(3, 7)$.

(f) Having an undefined slope and passing through the point $(3, 9)$.

(g) Passing through the points $(4, 2)$ and $(8, 4)$.

(h) Passing through the points $(-2, -7)$ and $(3, -9)$.

(i) Passing through the points $(-2, 5)$ and $(-2, 12)$.

(j) Passing through the points $(6, -13)$ and $(12, -13)$.

(k) Passing through the point $(2, 3)$ and being parallel to the graph of $y = 2x + 6$.

(l) Passing through the point $(-4, -2)$ and being perpendicular to the graph of $y = \frac{2}{3}x + 7$.

(m) Passing through the point $(-2, 7)$ and being parallel to the graph of $4x + 2y - 9 = 0$.

(n) Passing through the point $(-5, 7)$ and being perpendicular to the graph of $6x - 2y + 16 = 0$

2. The cost of a membership at a certain gym is \$150 for a start-up fee, and \$25 a month. Write an equation in slope-intercept form that models this linear relationship and calculate the total cost for a 2-year membership.

3. The length of time that it takes to lay tile in a hallway varies depends on the length of the hallway. A 12-foot-long hallway takes 212 minutes to complete. An 8-foot-long hallway takes 153 minutes to complete.

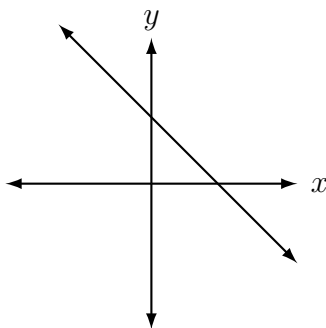
(a) Write an equation in slope-intercept form that models this linear relationship.

(b) Write the slope of the graph of this function and explain its real-world meaning.

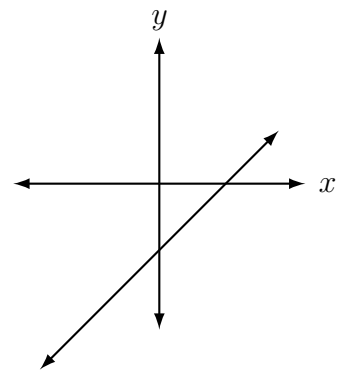
(c) Write the y -intercept of the graph of this function and explain its real-world meaning.

4. Each of these graphs was produced by an equation in the form $y = mx + c$. For each, determine whether m and c are positive, negative, or zero.

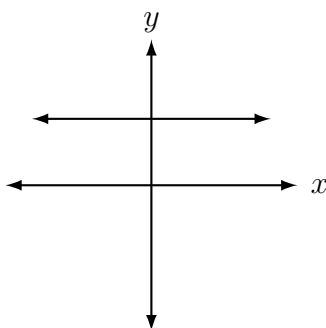
(a)



(b)



(c)



(d)

