Name: _____ **Total:** /22

Math 10C: Linear Functions Assignment

Multiple Choice (10 marks):
Identify the choice that best completes the statement or answers the question.

____ **1.** N(0, –2) and P(5, –12) are two points on a line. Determine the slope of the line containing the two points.

a. $\frac{14}{5}$ **c.** $-\frac{5}{14}$

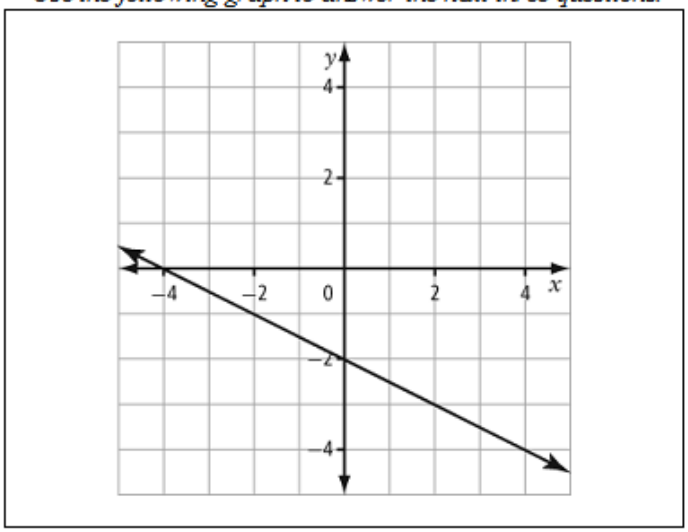
b. 2 **d.** –2

____ **2.** What is the value of p such that the line passing through (–2, –3) and (p, 5) has a slope of $\frac{8}{5}$?

a. $\frac{1}{5}$ **c.** 3

b. $\frac{5}{3}$ **d.** 11

Use the following graph to answer the next three questions.



____ **3.** Determine the slope of the line.

a. –2 **c.** $\frac{1}{2}$

b. $-\frac{1}{2}$ **d.** 2

____ **4.** What is the equation of the line in slope-intercept form?

a. $y = -\frac{1}{2}x - 2$ **c.** $y = \frac{1}{2}x - 2$

b. $y = -\frac{1}{2}x + 2$ **d.** $y = \frac{1}{2}x + 2$

____ **5.** What is the equation of the line in general form?

a. $0 = \frac{1}{2}x - y + 2$

b. $0 = x - 2y - 4$

c. $0 = -\frac{1}{2}x - y + 2$

d. $0 = x + 2y + 4$

____ **6.** What is the equation of the line that passes through (3, –1) and is parallel to the line $y = 3x + 2$?

a. $y = 3x + 10$

b. $y = 3x - 10$

c. $y = \frac{x}{3} + 8$

d. $y = \frac{x}{3} - 10$

____ **7.** What is the equation of the line that is perpendicular to the line $y = -3x + 2$ and passes through (3, –1)?

a. $y = \frac{1}{3}x$

b. $y = \frac{1}{3}x - 2$

c. $y = -\frac{1}{3}x$

d. $y = -\frac{1}{3}x - 2$

____ **8.** Points O(–5, –8) and P(–3, –4) are on a line. The y-intercept is –8. The equation of the line is

a. $y = -2x - 8$

b. $y = -2x + 8$

c. $y = 2x - 8$

d. $y = 2x + 8$

____ **9.** For the line $4x - 3y - 12 = 0$, which statement is true?

a. The x-intercept is 3 and the y-intercept is –4.
b. The x-intercept is 3 and the y-intercept is 4.
c. The x-intercept is 4 and the y-intercept is –3.
d. The x-intercept is 4 and the y-intercept is 3.

____ **10.** A line has slope of -9 and goes through the point (-4, -2). What is the equation of this line in slope-point form?

a. $y + 2 = -9(x - 4)$

b. $y - 2 = -9(x - 4)$

c. $y + 2 = -9(x + 4)$

d. $y - 2 = -9(x + 4)$

Numeric Response (4 marks):

1. Points C(5, 7) and D(−3, −12) are on a line. What is the run from point C to point D?
   (Record your answer in the numerical response box from left to right.)

2. The general form equation with a slope of $\frac{1}{2}$ and y-intercept of $-\frac{1}{4}$ can be written in the form of $ax - by - c = 0$. The value of $a + b + c$ is _____.
   (Record your answer in the numerical response box from left to right.)

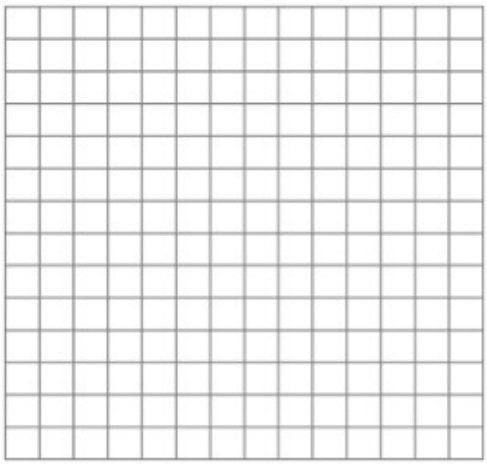
3. The equation of a line that passes through the point (2, 3) and has a slope of –2, can be written in the form $y = mx + b$. The value of $b - m$ is _____.
   (Record your answer in the numerical response box from left to right.)

4. A line has slope of 5 and goes through the point (1, 3), can be written in the form $y - y_1 = m(x - x_1)$. The value of $y_1 + m + x_1$ is _____.
   (Record your answer in the numerical response box from left to right.)

Problem (8 marks):

1. Points A(0, 12) and B(4, –4) are on a line.

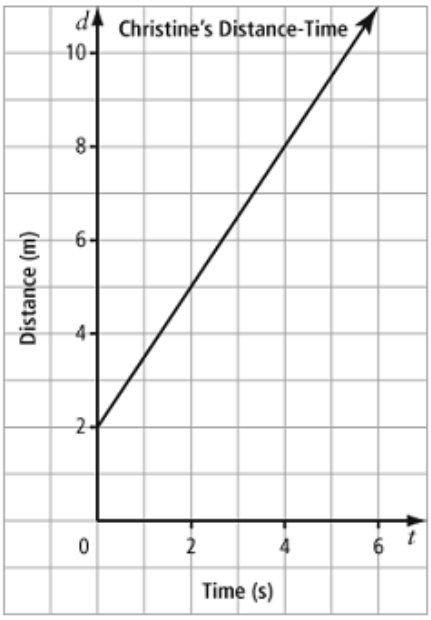
a) Plot points A and B on a graph and draw the line that passes through them (1 mark).



b) Write the equation of the line in slope-intercept form (1 mark).

c) Write an equation of another line, with a y-intercept of 8, that is parallel to the line you drew in part (a) (1 mark).

2. The distance-time graph illustrates Christine's walk in front of a motion sensor. Her distance from the sensor, in metres, is represented by the variable d, and time, in seconds, is represented by t.



a) Identify the slope and d-intercept. Explain what they mean (2 marks).

b) Write an equation in the form $d = mt + b$ that describes Christine's walk (1 mark).

c) Write an equation for the line in general form. (1 mark).

d) When was Christine 6 m from the sensor? (1 mark).