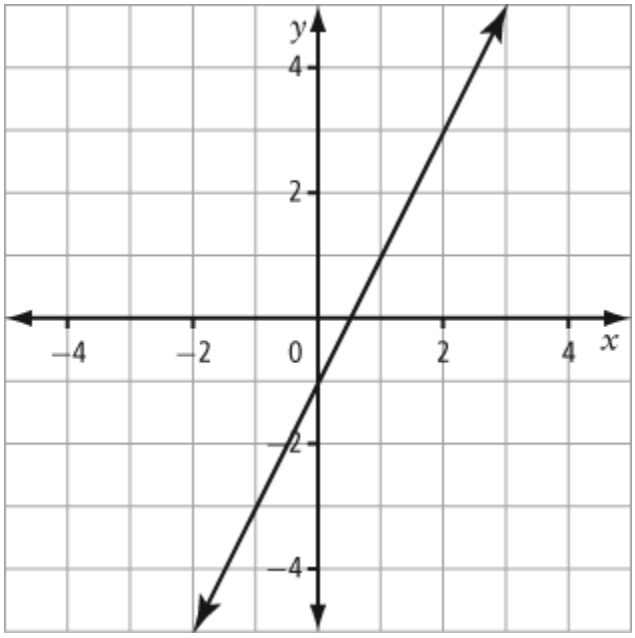
Name: _____ T.A. _____ Date: _____

Foundations of Math 10 LG 9&10 Version A /25

1. **Expectation #1: Identify the slope and y-intercept of a straight-line graph.**

   What are the slope and *y*-intercept of this line? **(1 mark)**



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2. **Expectation #2: Use slope-intercept form to graph, determine a line's equation, and solve problems.**

   Write the slope-intercept form of the equation of the line with slope = 3 and *y*-intercept = 2.
   (1 mark)

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3. Identify the slope and y-intercept of the relation represented by the equation $2x - 2y + 3 = 0$. **(1 mark)**

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4. The equation of the line through the point (2, 3) with slope –2 is: **(1 mark)**

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5. Expectation #3: Convert a linear equation to general form and use it to solve problems.

Write the equation in general form for the line with slope 3 and y-intercept –4. **(1 mark)**

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6. Expectation #4: Use intercepts to graph a line and relate the intercepts to a situation.

Determine the x-intercept of the line $y = 1 - x$. **(1 mark)**

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7. What is the equation of the vertical line that passes through the point (3, 4)? **(1 mark)**

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8. What is the y-intercept of the line $y = -4x - 7$ **(1 mark)**

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9. What is the value of p in the equation of the line $px + 2y + 8 = 0$, such that the x-intercept is 4? **(1 mark)**

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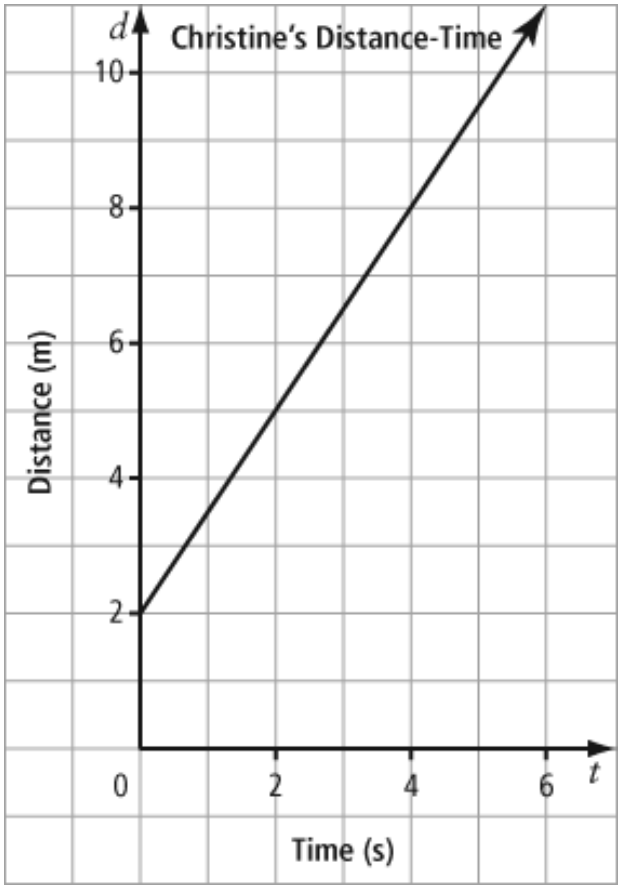
10. The distance-time graph illustrates Christine's walk in front of a motion sensor. Her distance from the sensor, in metres, is represented by the variable *d*, and time, in seconds, is represented by *t*. **(3 marks)**



a) State the slope and explain what it represents.

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

c) When was Christine 6 m from the sensor?

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11. Expectation #5: Use slope-point form to determine a line's equation, and solve problems.

Determine an equation for the line with slope 3 and passing through the origin. **(1 mark)**

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12. What is an equation for the line that passes through points (–1, –2) and (3, 4)? **(1 mark)**

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13. Using the table of values, determine the equation of the line. **(1 mark)**

x	y
0	−9
1	−6
2	−3
3	0
4	3

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14. Danny works at a parking lot, where he can park his own car at a discounted rate. Whether he is working or not, he pays a flat fee of $2.00 plus $0.25 per hour that his car is parked. **(3 marks)**

a) Write a linear equation to represent Danny's total parking cost, *C*, in dollars, for *t* hours.

b) How much will it cost Danny to park his car for a full 24 h?

c) If Danny has $6.00, for how many hours can he park his car in the parking lot

15. **Expectation #6: Identify whether two lines are parallel, perpendicular, or neither.**

The slopes of a pair of lines are provided. Decide whether the lines are parallel, perpendicular, or neither. Justify your answer. **(1 mark)**

$m = \frac{3}{4}$ and $m = \frac{12}{16}$

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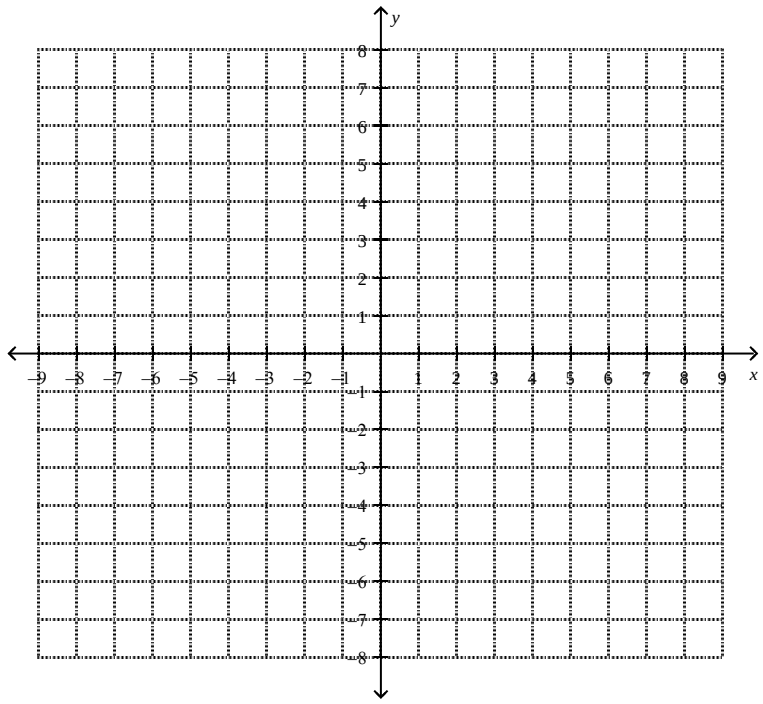
16. The vertices of quadrilateral ABCD are: A (0, 5), B (9, 2), C (7, –4), and D (–2, –1).
Plot the points and then use your knowledge of slopes of line segments to determine if ABCD is a rectangle. Explain your method. **(2 marks)**



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17. Expectation #7: Write the equation for, and solve problems involving parallel and perpendicular lines.

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

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18. State the slope of the line that is perpendicular to the line $y = \frac{2}{5}x - 3$ **(1 mark)**

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19. Write the equation of the line parallel to $y = 2x - 4$ and with the same x-intercept as $3x - 4y = 12$.
(1 mark)

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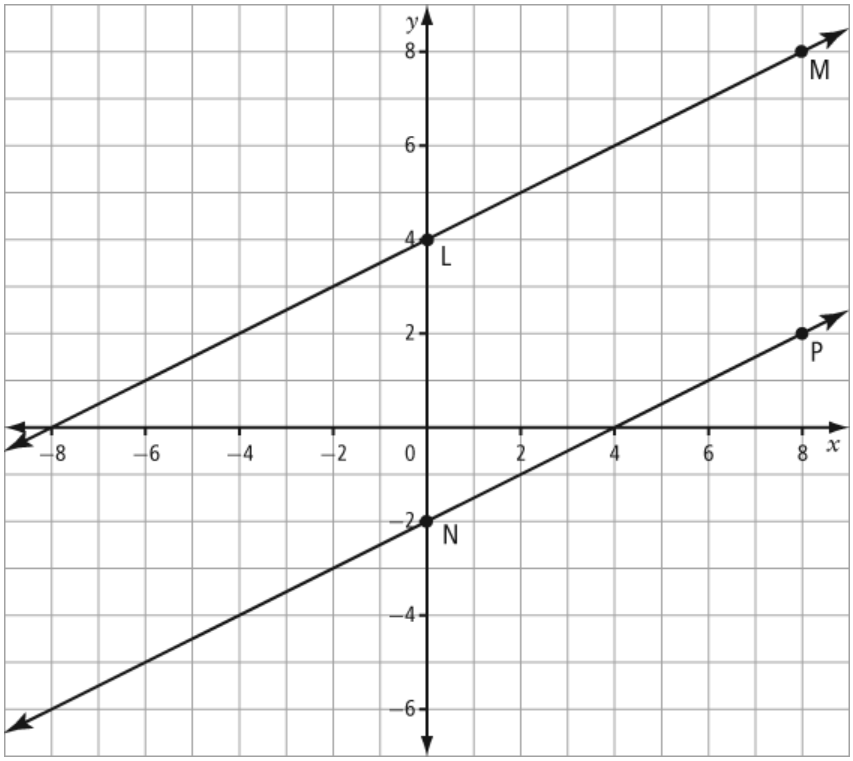
20. In the graph, the equation of the line containing LM is $y = 0.5x + 4$. The two lines are parallel. What is the equation of the line containing NP? **(1 mark)**



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