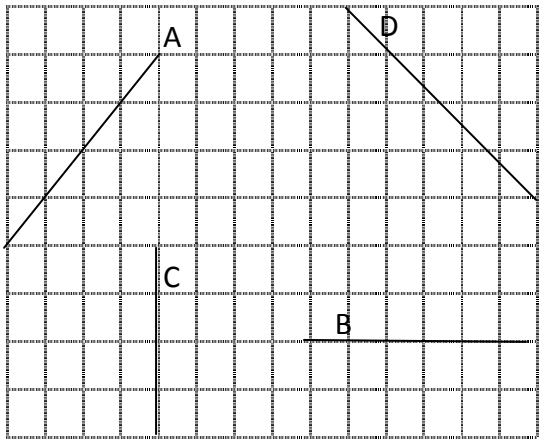
Math 10 Chapter 6 Review Name_____ /60

1. State whether the line segments (labeled A to D) below have slopes that are positive, negative, zero or undefined. (2 marks)



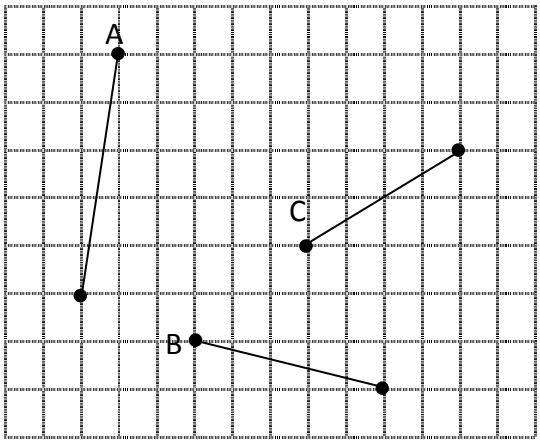
A: _____

B: _____

C: _____

D: _____

2. What is the slope $\frac{\text{rise}}{\text{run}}$ of the line segments (labeled A to C) given below: (3 marks)



slope of A:

slope of B:

slope of C:

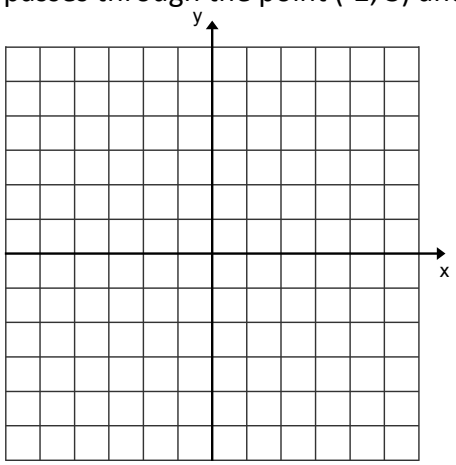
3. Given the following pairs of points use the slope formula to calculate the slope of the line segment that passes through the points. (2 marks each = 4 marks)

Slope Formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$

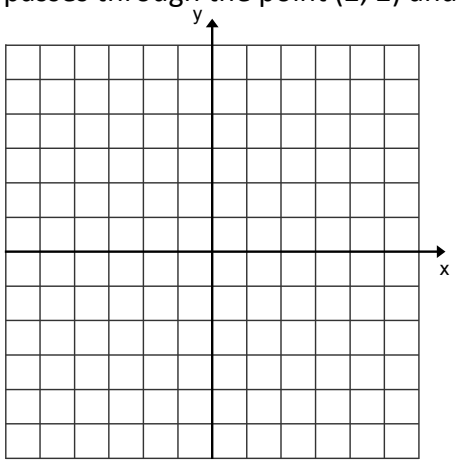
a) (3, 4) and (5, 8)

b) (-2, 1) and (3, -9)

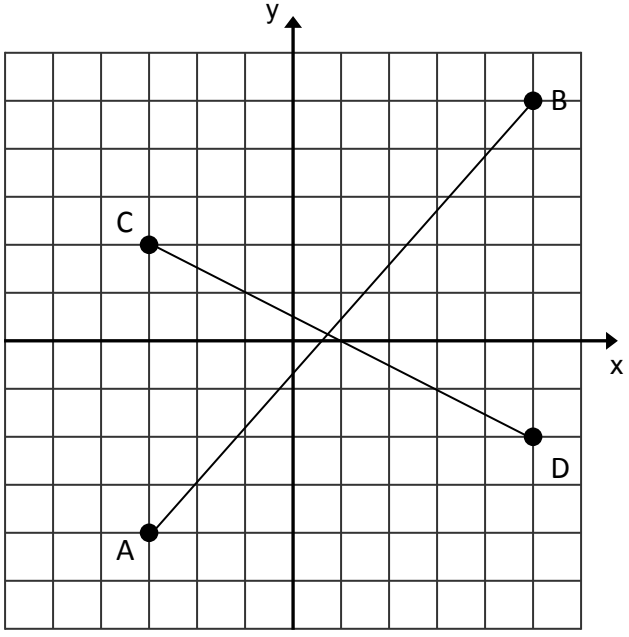
4. Draw the line that passes through the point (-2, 3) and has a slope of 2. (2 marks)



5. Draw the line that passes through the point (2, 2) and has a slope of $-\frac{1}{3}$. (2 marks)



6. Are the segments below perpendicular? Justify your answer by calculating the slopes of each segment. (3 marks)



Perpendicular (yes or no): _____

Slope of AB:

Slope of CD:

Why/Why not Perpendicular?

7. Identify the slope and the y-intercept for each of the following equations: (3 marks)

   a) y = 2x + 3 slope is: ____ y-int is: ____

   b) y = $-\frac{2}{3}$x – 3 slope is: ____ y-int is: ____

   c) y = 6 slope is: ____ y-int is: ____

8. For each equation, identify the slope of the line and the coordinates of a point on the line. (2 marks each = 4 marks)

   a) y + 2 = 3(x – 4) slope is: ____ a point is: (___ , ___)

   b) y = $\frac{1}{2}$(x + 2) slope is: ____ a point is: (___ , ___)

9. Write an equation in the form y = mx + b (slope/intercept form) for the graph of a linear function that:

   a) has a slope of -2 and a y-intercept of 3 (1 mark)

   b) has a slope of $-\frac{2}{3}$ and passes through the origin. (1 mark)

10. Write an equation in the form $y - y_1 = m(x - x_1)$ (slope/point form) for the graph of a linear function that:

    a) has a slope of 3 and passes through the point (2, -3) (2 marks)

    b) has a slope of 1 and passes through the origin (2 marks)

11. Write an equation in the form $y - y_1 = m(x - x_1)$ (slope/point form) for the graph of a linear function that passes through the points (4, 5) and (6, 9) (2 marks)

12. Write an equation in the form $y - y_1 = m(x - x_1)$ (slope/point form) for the graph of a linear function: (2 marks each = 4 marks)

    a) that is parallel to the line $y = 2x + 4$ and passes through the point (-2, 5).

    b) that is perpendicular to the line $y = 2x + 5$ and passes through the point (2, -3).

13. Rewrite the equation $y - 2 = 3(x + 1)$ into the form $y = mx + b$. (2 marks)

14. Rewrite the equation $y + 1 = \frac{2}{3}(x - 2)$ into the form $y = mx + b$. (2 marks)

15. The cost of taking a taxi is a linear function of the time. When the cost of a taxi ride is $9, the ride is 10 minutes long. When the cost is $14, the rid is 20 minutes long.

a) Write a linear equation in the form $y - y_1 = m(x - x_1)$ to represent the cost as a function of time. (3 marks) {Hint: Find the slope first!)

b) Write the above equation in the form $y = mx + b$ to represent the cost as a function of time. (2 marks)

16. Write the equations below in the form $Ax + By + C = 0$ (general form):

a) $2x = 3y + 2$ (1 mark)

b) $-2x + 3 - 2y = 0$ (2 marks)

c) $y = \frac{1}{2}x + 2$ (2 marks)

17. Write the equation below in the form y = mx + b (slope-intercept form):

a) $2x + y = 4$ (1 mark)

b) $2x – y = -4$ (2 marks)

c) $2x + 3y – 6 = 0$ (2 marks)

18. Determine the x-intercept and the y-intercept for each equation.
(2 marks each = 4 marks)

a) $4x + 2y = 8$

b) $-2x – 3y – 6 = 0$

19. Graph the line that has an x-intercept of -2 and a y-intercept of 3. (2 marks)