

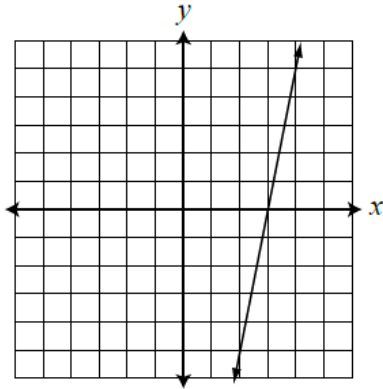
**FOM 10****\*Chapter 4 - Linear Functions PRACTICE Unit Test****/30**

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

\*circle final answers

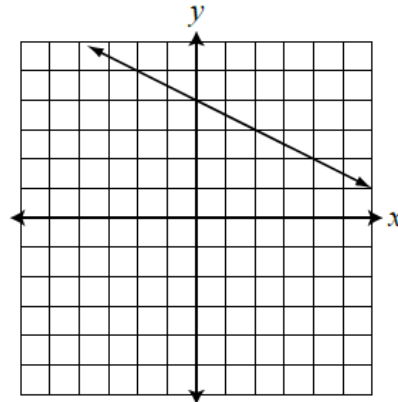
1. Determine the **slope** of the following graphs (1 mark each):

a.



m = \_\_\_\_\_

b.

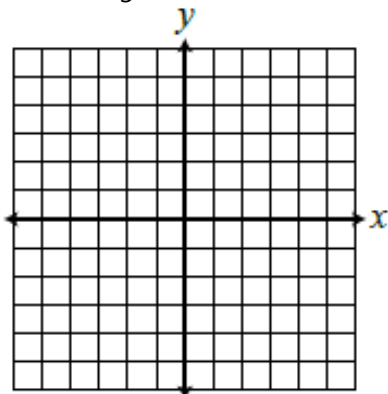


m = \_\_\_\_\_

2. Find the slope of the line containing each pair of points (1 mark each):

a.  $(2, 1)$  and  $(5, 6)$ b.  $(-4, 1)$  and  $(-2, -5)$ 

3. Determine the x-intercept and y-intercept of the linear equation with slope

 $m = -\frac{1}{3}$  going through the point  $(3, -3)$ . (2 marks)


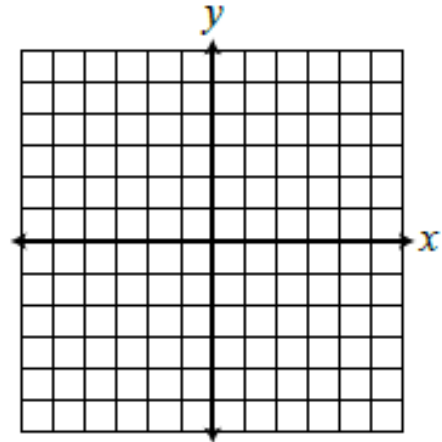
x – intercept: \_\_\_\_\_

y – intercept: \_\_\_\_\_

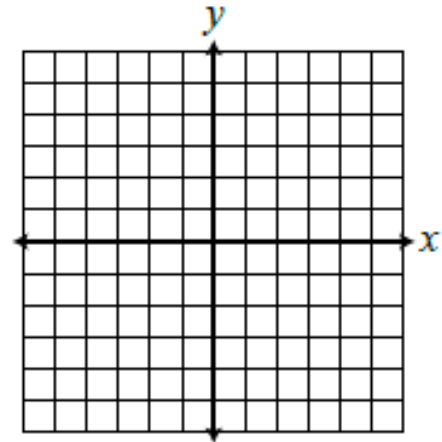
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4. Draw a line with a slope of  $m = \text{undefined}$  that has a x-intercept of 5 (1 mark).



5. Draw a line with a slope of  $m = 0$  and has a y-intercept of  $-4$  (1 mark).



6. Find a number  $n$  so that the line passing through the points  $(n, 8)$  and  $(-2, -4)$  has a slope of 3 (2 marks).

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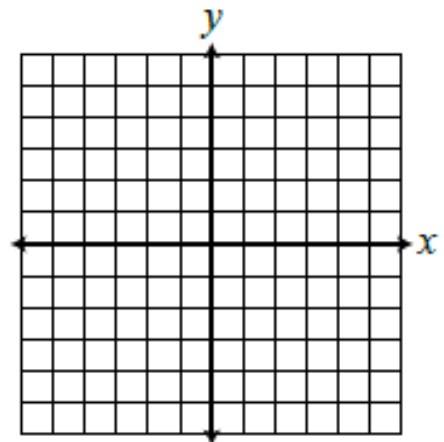
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7. Determine whether Line 1, passing through the first pair of points, is **parallel**, **perpendicular** or **neither** to Line 2, passing through the second pair of points (3 marks):

Line 1 through  $(4, -1)$  and  $(6, 2)$  , Line 2 through  $(-6, -6)$  and  $(4, 9)$

8. Find the slope of a line that is **perpendicular** to a line that passes through  $(-5, 1)$  and  $(4, -2)$  (2 marks).

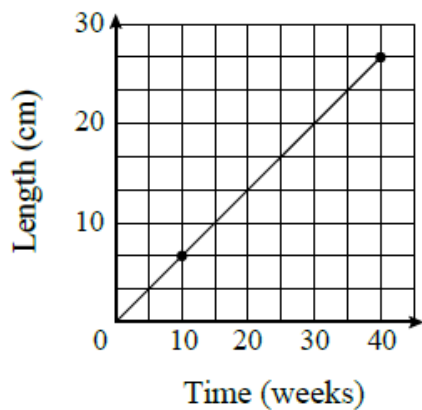
9. Show that the points  $A(1, 3)$  ,  $B(4, -3)$  and  $C(0, -5)$  are vertices of a right triangle. (3 marks)



10. The line through  $(-6, y)$  and  $(2, -5)$  is **parallel** to a line with slope  $\frac{-5}{4}$ .  
Find the value of  $y$ . (2 marks)

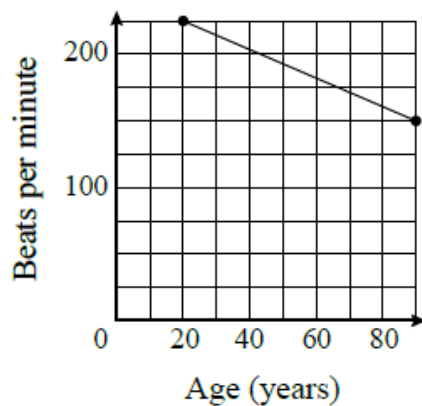
11. Given the following graphs, determine the rate of change: (2 marks each)

- a. ) Length of Unborn Child



Rate of change: \_\_\_\_\_

- b. Maximum Heart Rate



Rate of change: \_\_\_\_\_

Name: \_\_\_\_\_

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12. A **3 year old** car is worth \$24750, and will be worth \$4650 when it is **18 years old**. (\* Assume relationship is LINEAR)

a. Write the equation that shows the **Value** of the car (**V**) depends on the **depreciation rate** (**d**), the **number of years old** it is (**n**), and the value of the car when it was new, or the **initial value** (**i**) (1 mark)

b. Find the yearly depreciation of the car (rate of change). (1 mark)

c. Find the price of the car when it was new (the initial value, or *i*). (1 mark)

d. What is the linear equation that describes this relation, and what is the **Value of the car** when it is **11 years old**. (2 mark)

e. **After how many years** will the cars' value be **\$19,390**? (1 mark)