

Name: _____ Page Number: 1
 Class: Math 1301 Date: 10-2-12
 Topic/Section: Section 1.5
Interval Notation / Where a Function is
Increasing or Decreasing

Examples and Vocabulary	Notes/Comments/Questions
⑥ y = depreciated value of tractor in thousands of dollars t = elapsed years after purchase $y = g(t) = 150 - 25t$ a. Interpret $g(3)$ and then evaluate. $g(3) \rightarrow$ the value of the tractor after 3 years $= 150 - 25(3) = 150 - 75 = 75$ b. Find the slope and interpret. $m = -25$ The tractor's value is decreasing \$25,000 per year. c. Find the y-intercept and interpret. $b = 150$ The initial value of the tractor was \$150,000. d. Find the x-intercept and interpret. $t = 6$ The depreciated value is 0 after	$0 = 150 - 25t$ $-150 \quad -150$ $-150 = -25t$ $6 = t$ What is the basic interpretation of slope? How do we find the y-int. for functions in general? Why is the y-int. sometimes called the initial value? How do we find the x-int. for functions in general?

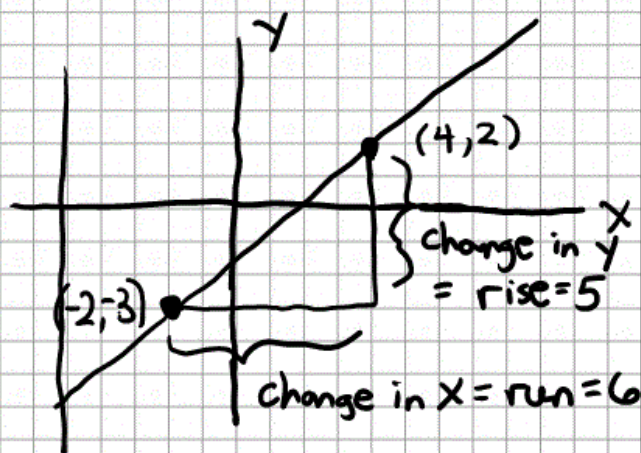
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Examples and Vocabulary

Notes/Comments/Questions

- ① Find the slope of the line containing the points $(-2, -3)$ and $(4, 2)$.



$$m = \frac{5}{6}$$

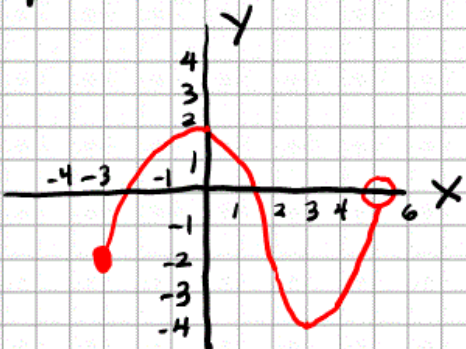
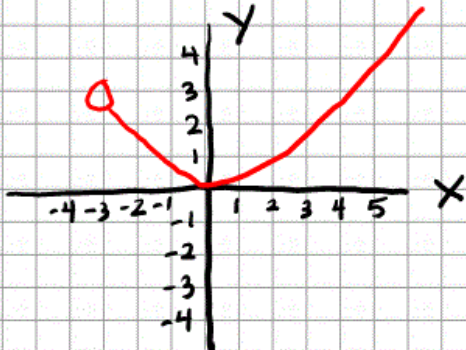
$$\begin{aligned} m \\ \text{slope} &= \frac{\text{change in } y}{\text{change in } x} \end{aligned}$$

$$= \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

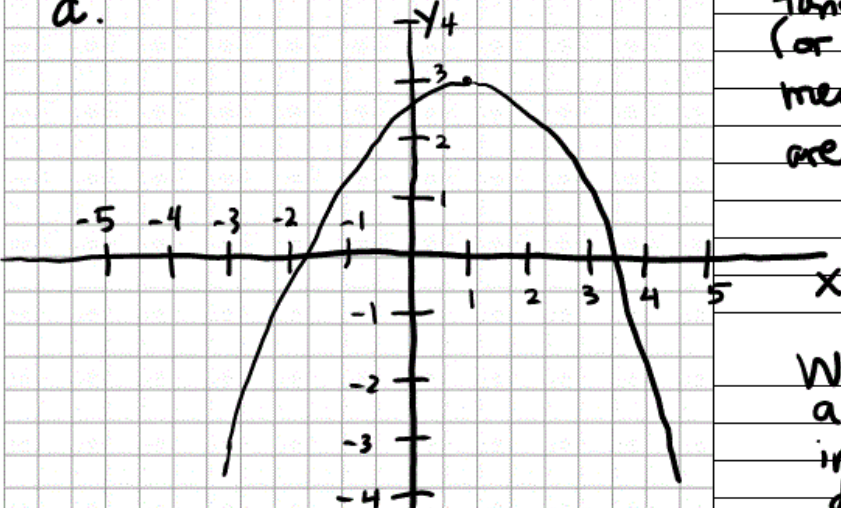
$$= \frac{-3 - 2}{-2 - 4} = \frac{-5}{-6} = \frac{5}{6}$$

$$= \frac{2 - (-3)}{4 - (-2)} = \frac{5}{6}$$

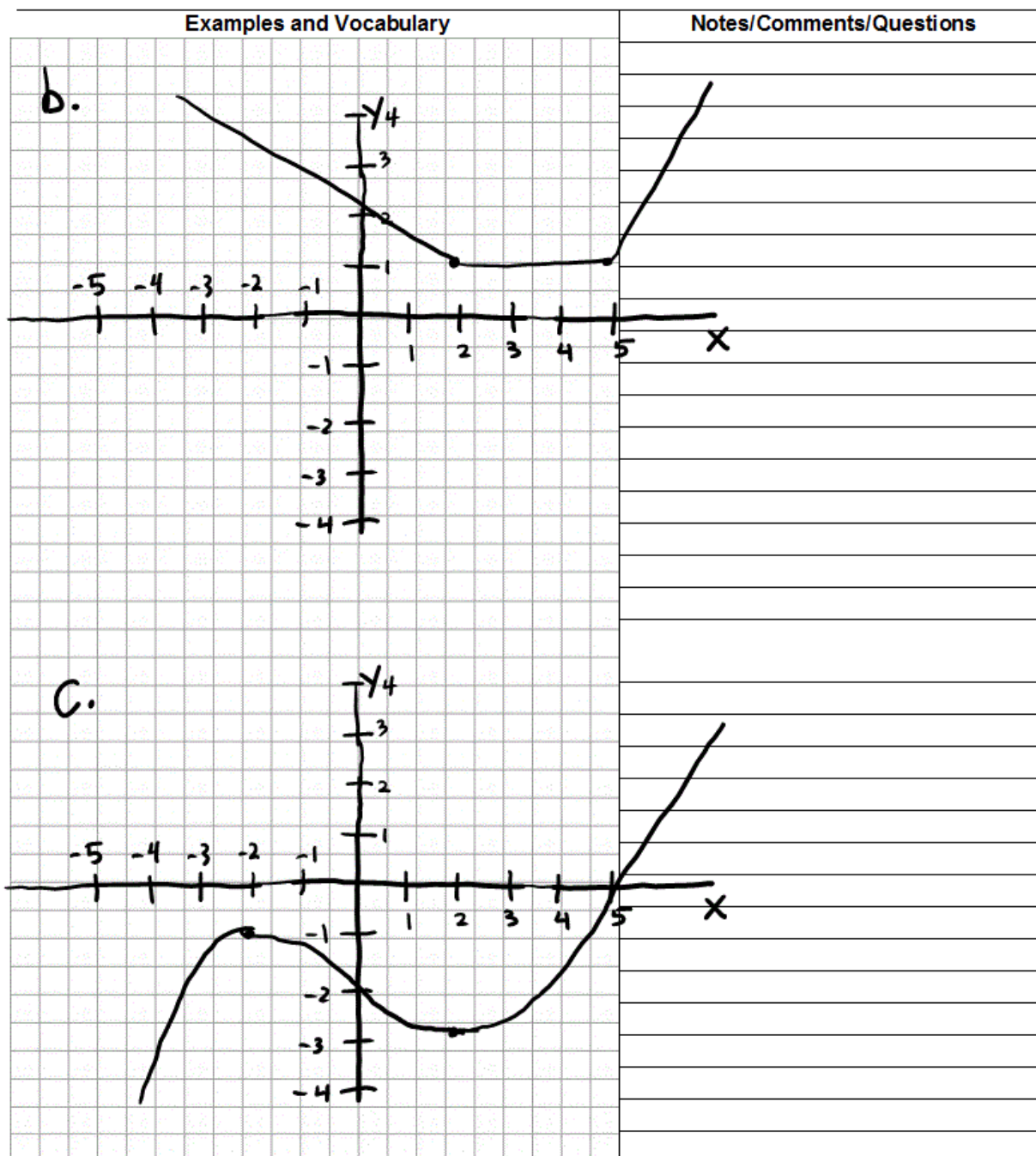
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Examples and Vocabulary	Notes/Comments/Questions
② Write the domain and range of the following functions using interval notation. a.  b. 	What do square brackets and parentheses mean in interval notation? What are some common mistakes using interval notation? domain: $-3 \leq x \leq 5$ $[-3, 5]$ range: $-4 \leq y \leq 2$ $[-4, 2]$ domain: $(-3, \infty)$ range: $[0, \infty)$

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Examples and Vocabulary	Notes/Comments/Questions
③ Determine where the following non-linear functions are increasing, decreasing, and constant. a. 	When we say a function is increasing (or decreasing), we mean the _____ are increasing. We describe where a function is increasing (or decreasing) in terms of which axis?

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