January 16, 2018 9:41 AM

Unit 5 Graphical Models

- given graph, be able to determine if rate of change (slope) is
  - increasing (graph is getting steeper)
  - decreasing (graph is getting less steep)
  - constant and not zero (graph is linear but not horizontal)
  - constant and zero (graph is a horizontal line.)

REMEMBER: Rate of Change means SLOPE

- slope / rate of change

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

- first differences, if same graph is linear
- second differences, if same graph is quadratic

- ratio column,
  if same and >1, graph is exponential growth
  if same and <1, graph is exponential decay

x	y	ratio column
1	12	
2	24	$24 \div 12 = 2$
3	48	$48 \div 24 = 2$
4	96	$96 \div 48 = 2$

- because ratio column is all the same, graph is exponential
- because $2 > 1$, graph is exponential growth

← rate of change (slope) is decreasing since graph is getting less steep.