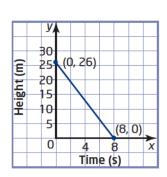
Assignment 2.2 – Linear & Exponential Functions

Answer each of the following

- 1. The average adult breathes in about 37 L of air every 5 minutes. What is the rate of change of volume of air?
- 2. A teenager's heart pumps an average of 2,000 gallons of blood every 24 hours. What is the rate of change of volume of blood?
- A hummingbird can flap its wings an average of 1800 times every 30 seconds. What is the 3. rate of change of wing flaps?
- 4. The graph shows the height above the ground of a rock climber over time. a) Calculate the slope of the graph. b) Interpret the slope as a rate of change.



5. The price of a loaf of bread increased from \$1.45 in 2003 to \$1.78 in 2006. What is the average price increase per year?

The table shows the minimum volume of water 6. needed to fight a typical fire in rooms of various sizes. Calculate the rate of change using units.

Floor Area (m²)	Minimum Volume of Water (L)
25	39
50	78
75	117

Refresh Your Memory

Identify whether the following items best fit with a *discrete* or a *continuous* model. Then determine whether it is a *linear* or *exponential* relationship that is being described. Explain.

7.	The freeway construction crew pours 300ft of concrete in a day.
8.	For every hour that passes, the amount of area infected by the bacteria doubles.
9.	The brick layers have started laying 5% more bricks each day.
10.	The average person takes 10,000 steps in a day.
11.	The city of Buenos Aires has been adding 8% to its population every year.
12.	At the headwaters of the Mississippi River the water flows at a surface rate of 1.2 miles per hour