Name: Key	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
Slope Applications	

1. The table below shows the high temperatures (in degrees Fahrenheit) of a city during the first part of June.

Date	1	6	8	14
High Temperature	72	76	84	86

a) Find the rate of change in high temperature between June 1st and June 6th. $\frac{76-72}{6-1} = \frac{4}{5} = 0.8°\text{ F/day}$

b) Find the rate of change in high temperature between June 6th and June 8th. $\frac{84-76}{8-6} = \frac{8}{2} = 4°\text{F/day}$

c) During which of these time intervals did the temperature rise faster?

From 6th to 8th

2. Josh started a diet and decided to record his weight every other week.

Week	0	2	4	6	8
Weight (lbs)	224	219	221	215	215

a) Find the rate of change from week 0 to week 2.

$\frac{219-224}{2-0} = \frac{-5}{2} = -2.5$ lb/week

b) Find the rate of change from week 2 to week 4.

$\frac{221-219}{4-2} = \frac{2}{2} = 1$ lb/week

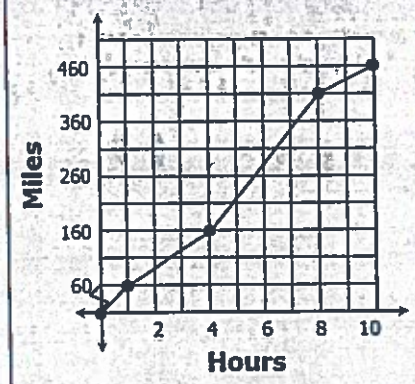
c) Find the rate of change from week 4 to week 6.

$\frac{215-221}{6-4} = \frac{-6}{2} = -3$ lbs/week

d) Find the rate of change from week 6 to week 8. Explain what this means.

$\frac{215-215}{8-6} = \frac{0}{2}$ no change in weight

3. The graph below shows the number of miles driven after each hour of a road trip.



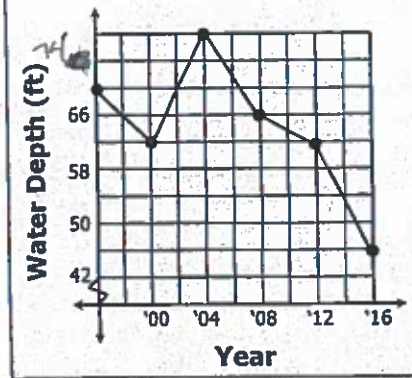
a) Find the rate of change from hour 1 to hour 4.

$\frac{100}{3} = 33.\overline{3}$ mi/hr

b) Find the rate of change from hour 8 to hour 10.

$\frac{50}{2} = 25$ mi/hr

4. The graph below shows the change in the water depth of a lake through various years.



a) Find the rate of change from 2000 to 2004.

$\frac{16}{4} = 4$ ft/year

b) Find the rate of change from 2012 to 2016.

$\frac{-16}{4} = -4$ ft/year

5. Ava started a savings account with $500. After 6 months, her savings account balance was $731. Find the rate of change.

$\frac{731-500}{6} = \frac{231}{6} = \$38.50$/month

6. An airplane is flying at an altitude of 36,000 feet when it begins it's descent for landing. Twelve minutes into its descent, it's at 29,400 feet. Find the rate of change in altitude.

$\frac{29{,}400 - 36000}{12} = \frac{-6600}{12} = -550$ ft/min

7. Ten minutes into her workout, Laura had burned 98 calories. Twenty-five minutes in, she had burned 272 calories. Find the rate of change in calories burned between ten and twenty-five minutes.

$\frac{272-98}{25-10} = \frac{174}{15} = 11.6$ cal/min

8. The population of Buford was 16,200 in 2010 and 13,824 in 2016. Find the rate of change in population.

$\frac{13{,}824 - 16{,}200}{2016-2010} = \frac{-2376}{6} = -396$ people/year