Name _____   Date _____
Mr. Schlansky   Algebra II

Average Rate of Change with Context

"On average, from x to x, the y topic is increasing/decreasing by AROC y units per x unit"

1. A family is traveling from their home to a vacation resort hotel. The table below shows their distance from home as a function of time.
Determine the average rate of change between hour 2 and hour 7. Explain its meaning in the given context.

Time (hrs)	0	2	5	7
Distance (mi)	0	140	375	480

2. The average monthly high temperature in Buffalo, in degrees Fahrenheit, can be modeled by the function $B(t) = 25.29 \sin(0.4895t - 1.9752) + 55.2877$, where t is the month number (January = 1). State, to the *nearest tenth*, the average monthly rate of temperature change between August and November. Explain its meaning in the given context.

3. The graph below represents the parabolic path of a ball kicked by a young child. Find the average rate of change from 3 to 6 seconds. Explain its meaning in the context of the problem.
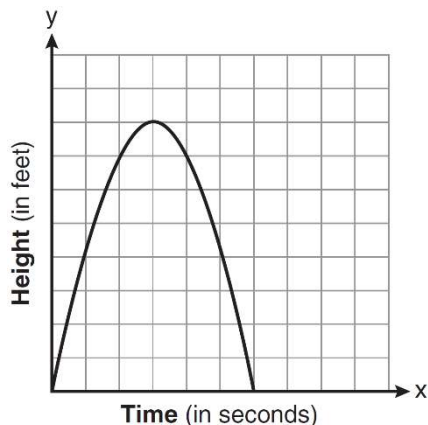
4. The population, $P(t)$, of a town increased according to the function $P(t) = 12,000(1.03)^t$, where t is the number of years since 2000. Find the average rate of change from $t = 10$ to $t = 20$ rounding to the nearest integer. Explain its meaning in the context of the problem.

5. A manager wanted to analyze the online shoe sales for his business. He created a graph to model the data, as shown below. Determine the average rate of change between the sixth and fourteenth hours, and explain what it means in the context of the problem.
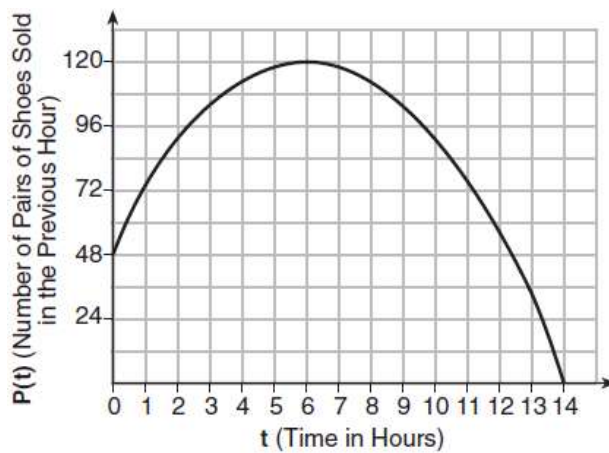
6. The table below shows the number of hours of daylight on the first day of each month in Rochester, NY. Given the data, what is the average rate of change in hours of daylight per month from January 1st to April 1st? Interpret what this means in the context of the problem.

Month	Hours of Daylight
Jan.	9.4
Feb.	10.6
March	11.9
April	13.9
May	14.7
June	15.4
July	15.1
Aug.	13.9
Sept.	12.5
Oct.	11.1
Nov.	9.7
Dec.	9.0