Functions Worksheet 3 - Answers

Graph 1

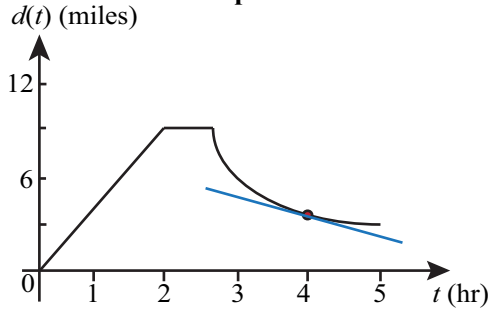

Table 1

	Pages	Days
Jenny	174	15
Luke	192	21
Boyd	112	11
Stephanie	63	4

1. Jenny, Luke, Boyd and Stephanie had a reading competition over the summer (refer to Table 1). Who read the most?
   Luke read 192 pages.

2. Referring to Table 1, who read the fastest and determine the rate.
   Stephanie with rate $15.75\frac{\text{pages}}{\text{day}}$.

3. Referring to Graph 1, find the average rate of change for $0 \leq t \leq 2$.
   Average rate of change is 4.5 mile/hr.

4. Draw a line in Graph1 whose slope represents the speed at $t = 4$ hr.
   The tangent to $d(t)$ at $t = 4$ hr.

5. If it rains 2 inches on Monday and it increases to 4 inches by Friday, what is the rate of increase in many inches per day?
   Rate $= 0.5\frac{\text{inches}}{\text{day}}$.

6. Calculate the average rate of change of $f(x) = 4x^2 + 3x + 5$ between $x = 2$ and $x = 5$, as a function of x.
   $\frac{\Delta f(x)}{\Delta x} = 31$.

7. Calculate the average rate of change of $g(x) = \frac{1}{x} - x^2$ between $x = -2$ and $x = 3$, as a function of x.
   $\frac{\Delta g(x)}{\Delta x} = -\frac{1}{30}$.

8. If, after 2.5 hours of driving at a constant speed, you have traveled 175 miles, what is the rate of change of your distance d over time?
   Speed $= 70\frac{\text{miles}}{\text{hour}}$

9. Referring to problem 7, if you increase your speed by 5%, how far will you travel in the next 2.5 hours?
   183.75 hours.

10. If your speed s increased from 30 miles per hour to 35 miles per hour over 30 seconds, what is the rate of change of your speed?
    acceleration $= 600\frac{\text{miles}}{\text{hour}^2}$.