Practice Test for Functions Unit Quiz

Learning Objectives:
A. Model two variable situations.
B. Identify the domain, range, and intercepts of a modeled function.
C. Given one form of a function, equation, graph, or table, find another form.
D. Evaluate a function using function notation.
E. Model a linear function given two points.
F. Identify the rate of change (slope), in a linear function given the equations, graph or table.
G. Find the equation of a line parallel or perpendicular to a given line.
H. Find the inverse of a function.
I. Solve a system of equations.
J. Find the solution to a problem using a system.

Question #	Learning Objective	Know It	Feel Unsure		Right	Wrong	Simple Mistake	Need to Study
1	A							
2	B							
3	C							
4	D							
5	E							
6	F							
7	G							
8	H							
9	I							
10	J							

1. I am 400 miles from my home. I am traveling at an average 60 miles per hour towards my home. Graph this situation.
2. Find the domain, range, and intercepts for the scenario in problem #1. Describe how they relate to the scenario.
3. Write a function based on the scenario in problem #1.
4. A rare species of insect was discovered in the rain forest of Costa Rica. Environmentalists transplant the insect into a protected area. The population of the insects t months after being transplanted is:

    $P(t) = \dfrac{45(1+0.6t)}{(3+0.02t)}$ a)What is the population when $t = 0$?   b) What will the population be after 10 years?

5. Taking a taxi 3 miles costs $7.75 while going 8 miles costs $10. Write a function to model this situation.
6. Identify the rate of change, slope, of the situation in problem #5. What does this represent to the scenario?
7. Write equations for the remaining sides of a rectangle if one side goes through the line $f(x) = 3x + 10$.
8. The function, $f(x) = 7x + 45$, represents the cost of holding a party at Roaring Springs Water Park given that there is a $45 flat fee and $7 per person. Find the inverse of this function. Describe what the inverse tells us in relationship to the scenario.
9. Solve this system: $\begin{cases} 3x - 5y = 20 \\ 4x + y = 19 \end{cases}$
10. A grain-storage warehouse has a total of 30 bins. Some hold 20 tons of grain each and the rest hold 15 tons each. How many of each type of bin are there if the capacity of the warehouse is 510 tons?