Algebra 2 Honors- Week 4 Homework

**Monday-**

**Systems of Equations Word problems: for all problems, define variables, write the system of equations, and solve for all variables.**

1. Kristin spent $131 on shirts. Fancy shirts cost $28 and plain shirts cost $15. If she bought a total of 7 shirts then how many of each kind did she buy?
2. Matt and Ming are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. Matt sold 3 small boxes and 14 large boxes of oranges for a total of $203. Ming sold 11 small boxes and 11 large boxes of oranges for a total of $220. Find the cost of one small box of oranges and one large box of oranges.
3. The senior classes at Sumter High School and Crestwood High School planned separate trips to New York City. The senior class at Crestwood High School rented and filled 1 van and 6 buses with 372 students. Sumter High School rented and filled 4 vans and 12 buses with 780 students. Each van and each bus carry the same number of students. How many students can a van carry? How many students can a bus carry?
4. At a college bookstore, Carla purchased a math textbook and a novel that cost a total of $54, not including tax. If the price of the math textbook is $8 more than 3 times the price of the novel. What is the price of the math textbook? What is the price of the novel?

**Tuesday-** Study for quiz on Wednesday! (Answers are under announcements for algebra 2 honors).

# Practice Test for Functions Unit Quiz

**Learning Objectives:**

1. Model two variable situations.
2. Identify the domain, range, and intercepts of a modeled function.
3. Given one form of a function, equation, graph, or table, find another form.
4. Evaluate a function using function notation.
5. Model a linear function given two points.
6. Identify the rate of change (slope), in a linear function given the equations, graph or table.
7. Find the equation of a line parallel or perpendicular to a given line.
8. Find the inverse of a function.
9. Solve a system of equations.
10. Find the solution to a problem using a system.

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| **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\left(t\right)=\frac{45(1+0.6t)}{(3+0.02t)}$

a)What is the population when t = 0?

b) What will the population be after 10 years?

1. Taking a taxi 3 miles costs $7.75 while going 8 miles costs $10. Write a function to model this situation.
2. Identify the rate of change, slope, of the situation in problem #5. What does this represent to the scenario?
3. Write equations for the remaining sides of a rectangle if one side goes through the line $f\left(x\right)=3x+10.$
4. The function, $f\left(x\right)=7x+45,$ 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.
5. Solve this system: $\left\{\begin{array}{c}3x-5y=20\\4x+y=19\end{array}\right.$
6. 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?

**Wednesday-**

Quiz Day (No Homework)

**Thursday -**

Make sure the tortoise and the hare worksheet and graph are finished (provided in class).





**Friday-** Make sure the tortoise and the hare worksheet and graph are finished (provided in class), along with your story!