Sept. 8 Worksheet

1. Find the domain and range of the following.

   $f(x) = 2x+7$

   $f(x) = (\sqrt{x-8}) + 3$

2. Is the relation between a person and their birthday a function? What are the inputs and outputs?

3. Are the following equations functions? Make a small sketch.

   $3x - 4y = 8$

   $y^2 - x^2 = 10$

4. A migraine medicine is make for $8 per unit. The total cost to produced 100 units is $2,100.

   What is the cost function equation?

   Using this information, find the fixed costs.

5. From question 4, find the average cost to produce 100 compared to 1000 units.

6. The Tillie Truffle factory has a weekly fixed cost of $25,000. It costs $2.50 to produce each box of truffles. A box of these truffles sells for $4.25.

- find the cost function to produce x boxes of truffles

- find the revenue function from selling x boxes of truffles

- find the profit function on x boxes of truffles

7. Sales. The following function represents projected sales (in thousands of dollars) for a small company for the next 10 years.

$S(x)=0.5x^4 - 0.2x^3 + 1.5x^2 + 5x + 50$

- What are the project sales for the current year?

- What sales are expected for year 5? Year 8?