**Lab 2 for Section 6.10** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Use good notation and show appropriate work. Write solutions to application problems in* ***complete sentences***.

1. Use the graph of *f* given below to answer the following questions.

**** (a) What is the slope of the line?

 (b) What are the *y­* and *x* intercepts?

 (c) Use the graph to find *f* (–2)and *f* (1).

 (d) Write this as a function *f* (*x*) = *mx* + *b*.

 (e) Use part (d) to find *f* (10).

2. Let 

 (a) Determine whether the parabola will (b) Find the equation of the line of symmetry.
 open upward or downward.

 (c) Find the vertex. (d) Find the *y*-intercept.

 (f) Find the domain and range of the function. (f) Sketch a graph of $f(x)$.

 ****

|  |  |
| --- | --- |
| Hours | Mints |
| 2 | 100 |
| 3 | 150 |
| 4 | 200 |
| 5 | 250 |

3. A company manufactures mints. The table shows the number of mints made in a specified time period. Assuming that the number of mints grows linearly as a function of time.

 (a) Find a function *f* (*x*) = *mx* + *b* that describes the number of mints after $x$ hours.

 (b) How many mints will the machine make in 20 hours? How many will it make in 4 hours?

 (c) What is the domain of this function?

4. The population P of a bacteria colony grown exponentially as a function of time, *t*, in hours. One particular bacteria’s growth satisfies the following equation.



$$ $$

 (a) How many bacteria are there initially?

 (b) How many bacteria are there after 5 hours?

 (c) How many bacteria are there after 20 hours?

 (d) What is the domain and range of this function?

 (e) Graph the function.

 ****