

This practice sheet is meant to help you become more familiar with graphing.  
In your graph sketches label the  $y$ -intercept and the point  $(1, f(1))$ .  
You are free to use a graphing or on-line calculator if you feel stuck.

Suppose that  $f(x) = 2^x$ .

1. Sketch the graph of  $y = f(x)$ .
2. What is the  $y$ -intercept of  $y = f(x)$ ?
3. Write down in no more than 3 complete sentences how you would explain to a novice that the graph for the function  $y = f(x)$  is increasing. [Hint: Try to compare  $2^3$  and  $2^4$ . In general, what is the difference between  $2^{n+1}$  and  $2^n$ ?]
4. Sketch the graph of the function  $y = 10 + f(x)$ .
5. What is the  $y$ -intercept of  $y = 10 + f(x)$ ?
6. Sketch the graph of the function  $y = -f(x)$ .
7. What is the  $y$ -intercept of  $y = -f(x)$ ?
8. Sketch the graph of the function  $y = 5 \cdot f(x)$ .
9. What is  $y$ -intercept of  $y = 5 \cdot f(x)$ ?

Suppose that  $g(x) = (1/2)^x$ .

1. Sketch the graph of  $y = g(x)$ .
2. What is the  $y$ -intercept of  $y = g(x)$ ?
3. Write down in no more than 3 complete sentences how you would explain to a novice that the graph for the function  $y = g(x)$  is decreasing.
4. Sketch the graph of the function  $y = 10 + g(x)$ .
5. What is the  $y$ -intercept of  $y = 10 + g(x)$ ?
6. Sketch the graph of the function  $y = -g(x)$ .
7. What is the  $y$ -intercept of  $y = -g(x)$ ?
8. Sketch the graph of the function  $y = 5 \cdot g(x)$ .
9. What is  $y$ -intercept of  $y = 5 \cdot g(x)$ ?