

## CP Unit 2 Study Guide

**Matching: Be able to match each parent function graph with its equation (9 questions).**

### **Multiple choice (18 questions)**

1. If the graph of  $f(x) = 0.5^x$  is shifted 3 units down, what would be the graph of the new function?
2. If the graph of  $f(x) = 2^x$  is shifted 4 units up, what would be the equation of the new graph?
3. Which parent function was transformed to create the function  $f(x) = 2x^2 - 5$ ?
4. What is the range of the quadratic parent function?
5. Is the exponential growth function odd, even, or neither?
6. Which describes the end behavior of a constant function?
7. Which parent functions have an asymptote?
8. Is the cube root parent function increasing, decreasing, both, or neither?
9. Is the quadratic function odd, even, or neither?
10. Which parent function is illustrated in the table of values?

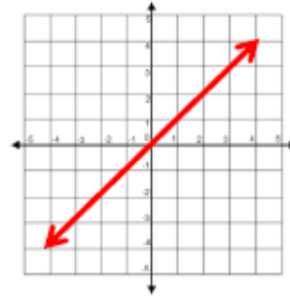
$x$	$f(x)$
-2	-2
-1	-1
0	0
1	1
2	2

### **Short answer (10 questions)**

1. Describe the transformation:  $g(x) = f(x) - 5$
2. Describe the transformation:  $g(x) = f(x-3)$

3. Describe the transformation:  $g(x) = -2f(x)$

4. Describe the end behavior of the function in the graph.



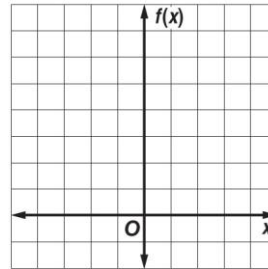
5. Write an equation for the translation of the parent function  $f(x) = x^2$ . The parent function has been translated 3 units up.

6. Create an quadratic function that shifts 2 units up. Use the parent function  $f(x) = x^2$

7. Campbell says that the linear function is decreasing. Is she correct? Explain.

8. Graph the following piecewise function.

$$f(x) = \begin{cases} -1 & \text{if } x \leq 0 \\ -2x & \text{if } 0 < x \leq 3 \\ 6 & \text{if } x > 3 \end{cases}$$



9. Evaluate the piecewise function in #8 for  $f(-5)$ ,  $f(-1)$ ,  $f(0)$ , and  $f(2)$

10. **BUSINESS** A *Stitch in Time* charges \$10 per hour or any fraction thereof for labor. Draw a graph of the step function that represents this situation.



a) How much would A *Stitch in Time* charge for 4 hours?

b) How much would A *Stitch in Time* charge for 8 hours and 35 minutes?