

APPC Lesson 3.1 Homework

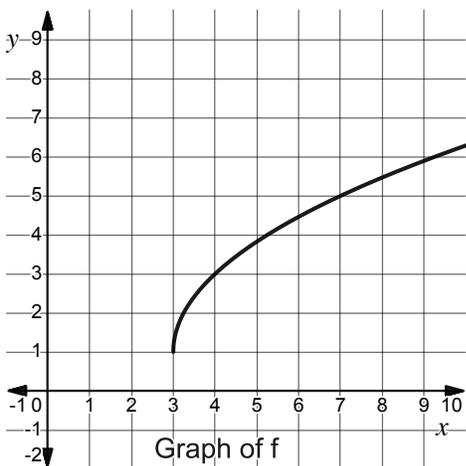
Name _____

1. Identify the parent function of f .

a. $f(x) = 2 - 11x + 23x^2$

b. $f(x) = 3|x - 4| + 8$

c.



d.

x	1	3	5	7
$f(x)$	7	4	1	-2

2. Consider the parent function $f(x) = x^2$.

a. Describe the intervals on which f is increasing, decreasing, and constant.

b. Are the average rates of change of f increasing or decreasing? Explain.

3. Let f be the identity function and g be the reciprocal function. Find $4f(-2) + g(-2)$.
4. Which of the following parent functions is increasing over its entire domain?
- A) $y = x^3$
 - B) $y = |x|$
 - C) $y = \frac{1}{x}$
 - D) $y = x^2$
5. Consider the parent functions $y = \frac{1}{x}$, $y = x^2$, $y = x^3$, $y = x$, and $y = |x|$. Which of the functions has the greatest output at $x = \frac{1}{3}$? Which of the functions has the least output at $x = \frac{1}{3}$?
6. Describe a scenario that could be modeled by the identity function.
7. Consider the parent functions $f(x) = x^2$ and $g(x) = x^3$. For some values of k , it is true that $f(k) > g(k)$. Find two possible values of k .
8. The shape of which of the six parent functions best models the cost per person, y , when the price of dinner is split equally among x people?

9. Let $g(x) = ax + b$, for some non-zero constants a and b .

a. What is the parent function of g ?

b. Describe the similarities and differences between the graph of g and its parent function.