

Name _____

Date _____

The tables below each represent a different function. Use these functions to answer questions 1 – 5.

x	-2	-1	0	1	2
f(x)	9	5	1	-3	-7

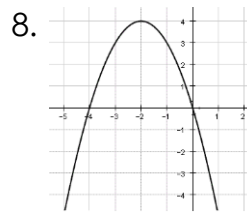
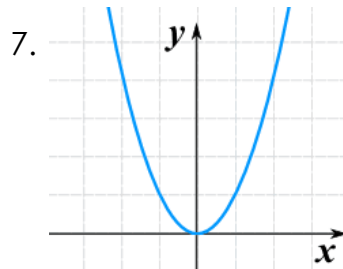
x	-2	-1	0	1	2
f(x)	0.25	1	4	16	64

x	-2	-1	0	1	2
f(x)	5	3	3	5	9

1. What is the equation of the exponential function?
2. Which function is a quadratic?
3. What is the equation of the linear function?
4. Which function has a common difference?
5. Which function has a common ratio?

Are the following functions even, odd, or neither?

6. $f(x) = 7x^2 + 5x$



9. $g(x) = 7x^4 - 1$

Domain:

Range:

Increasing:

Decreasing:

A.O.S.:

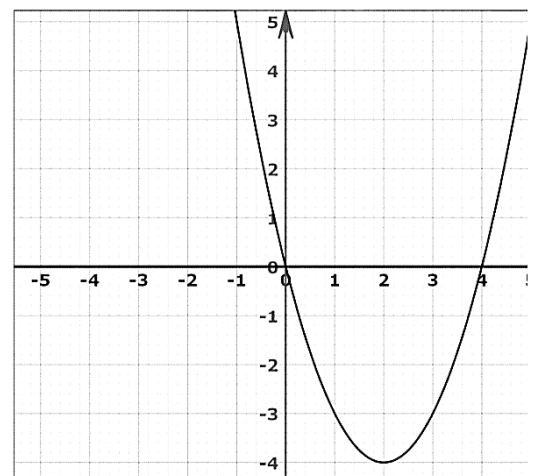
Vertex:

x-intercept(s):

y-intercept(s):

End behavior: $x \rightarrow -\infty, y \rightarrow \underline{\hspace{1cm}}$
 $x \rightarrow \infty, y \rightarrow \underline{\hspace{1cm}}$

Rate of Change $[-1, 1] =$



Explain which type of function (linear, exponential, or quadratic) or sequence (arithmetic or geometric) you would write for the following scenarios. Then, explain why that is the best

- a. On the first day of the week, Dexter rides his mountain bike for 5 miles. To prepare for his tournament this weekend, he adds 3 more miles to his ride each day.

- b. Cameron starts the band season practicing 32 hours a week. As the season comes to an end, Mr. Erwin reduces practice time by half each week.

- c. David is getting ready for soccer season. He asks Gabe to record the height of the ball after he kicks it into the air. After 2 seconds, it has reached a maximum height of 60 feet.

Jonathan is trying to decide how he wants to save for a new iPhone. His parents tell him that they will give him \$5 to start with, but he has two options for saving money.

Option 1: Every week the previous amount will double.

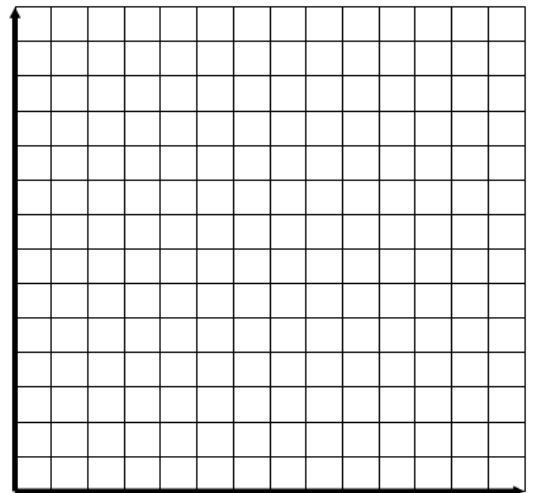
Option 2: Every week the previous amount will increase by \$15

10. Write a function for each option.

Option 1: $D(x)=$

Option 2: $A(x)=$

11. Graph each function and label the two functions.
(Hint: Scale the y's by fives)



12. Compare the **rate of change** for each option, for the following interval, $[0, 3]$.

Option 1:

Option 2:

13. If the iPhone costs \$100, which option should he choose?

14. If Jonathan decides to save the money for college instead, how long would it take him to get to \$10,000 for **Option 1**?