

Secondary Math 2

Unit 2 – Introduction to Functions

PRACTICE TEST

Name

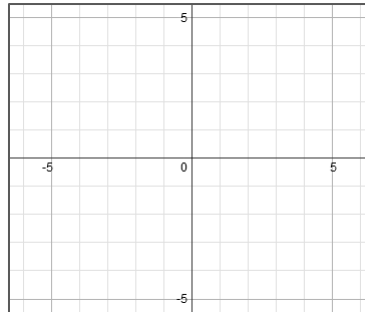
(LESSON)

(2-1)

1. Identify each of the four functions represented in the table as linear, absolute value, quadratic, or exponential.

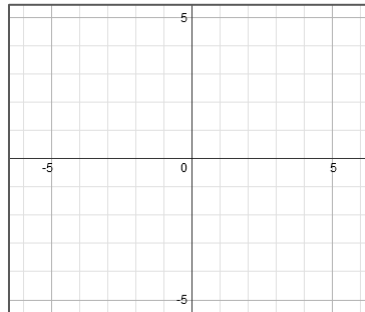
x	$a(x)$	$b(x)$	$c(x)$	$d(x)$
-3	-2.5	0.01	8	25
-2	-3	0.1	-2	17
-1	-3.5	1	-8	9
0	-4	10	-10	1
1	-3.5	100	-8	-7
2	-3	1000	-2	-15
3	-2.5	10000	8	-23

2. Graph the function: $f(x) = \frac{4}{3}x + 1$



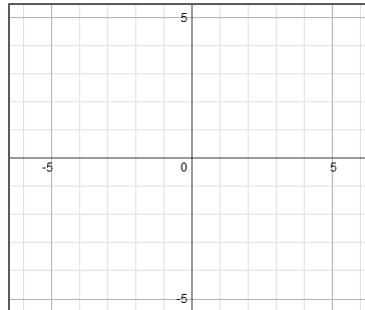
(2-1)

3. Graph the function: $f(x) = 3^x + 1$



(2-1,2)

4. Graph the function: $f(x) = |x + 1| - 2$

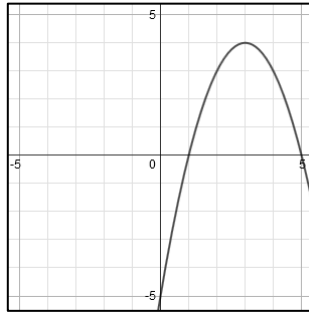


(2-1,2)

5. Given $f(x) = x^2$, explain the transformation given by $-f(x + 5) - 13$.

(2-2)

6. Use the graph of the function to identify intervals of increasing or decreasing.



(2-3)

7. Identify the vertex of $f(x) = \frac{1}{2}|x| + 8$ and whether it represents a minimum or maximum.

(2-3)

8. Identify the vertex and y-intercept of the graph of the function $y = -4(x-1)^2 + 6$.

(2-3)

9. Label each function as odd, even, or neither.

(2-4)

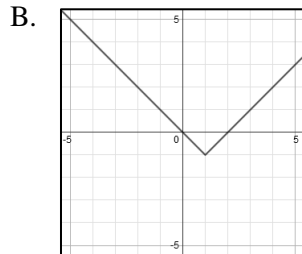
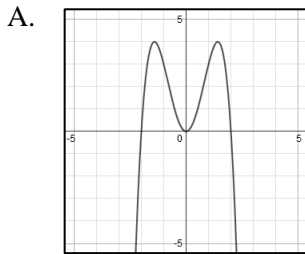
A. $f(x) = x^2 + 7$

B. $f(x) = 5x^3 + 3$

C. $f(x) = 4x$

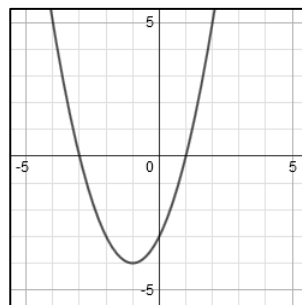
10. Label each function's graph as odd, even, or neither.

(2-4)



11. Use the graph to estimate the average rate of change of the function on the interval $[-3, 2]$.

(2-4)



Use the following information for problems 12 and 13: The height of a softball thrown into the air with an initial velocity of 72 ft./sec. can be modeled by the equation $h(t) = -16t^2 + 72t + 7$. In this model, t represents time in seconds, and $h(t)$ represents the height of the ball in feet.

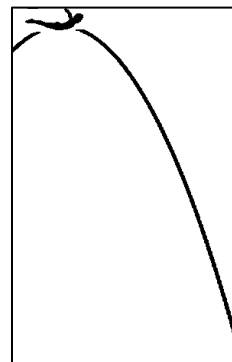
12. Find the average rate of change of $h(t)$ on the interval $[1, 2]$. (2-4)

13. What is the meaning of the rate of change found in problem 12? (2-5)

14. The function $P(t) = 300(1 + 0.06)^t$ is used to predict the current balance in Alex's bank account, where $P(t)$ is the current balance t years since 2010. (i.e. $t = 0$ is 2010, $t = 1$ is 2011, etc.). Predict his account balance in 2020. (2-5)

Use the following information for problems 15 and 16: Geraldo goes every year to a cliff diving competition in Acapulco. The competitors dive off of cliffs of varying heights into the ocean. His height above the ocean as a function of time can be modeled by the function $h(t) = -16(t-1)^2 + 135$, where t is time in seconds and $h(t)$ is height above the ocean in feet.

15. How long did it take for Geraldo to reach his maximum height above the ocean?



(2-5)

16. At that time, how far above the ocean did he find himself?

(2-5)