Today we will...

-finish up 1.6

-go over any 1.6 HW questions

-take a quiz

-work on 1.7

-check 1.5 HW

Sep 13-2:10 PM

4. If the race course were 15 meters long who wins, the tortoise or the hare? Why?

The hare would because he's ahead between 4 & 16 meters (2 & 4 seconds).

5. Use the properties $d = 2^t$ and $d = t^2$ to explain the **speeds** of the tortoise and the hare in the following time intervals:

Interval	Tortoise $d = 2^t$	Hare $d = t^2$
[0, 2)	d(0)= $2^0 = 1$ d(2)= $2^2 = 4$ Avg. speed: $\frac{4-1}{2-0} = \frac{3}{2}$ = 1.5 m/s	d(0)= $0^2 = 0$ d(2)= $2^2 = 4$ Avg speed $\frac{4-0}{2-0} = \frac{4}{2} = 2$ m/s
[2, 4)	d(2)= 4 d(4)= $2^4 = 16$ Avg. speed $\frac{12}{2} = 6$ m/s	d(2)= 4 d(4)= 16 Avg. speed: $\frac{12}{2} = 6$ m/s
[4, ∞)	d(4)= 16 d(100)=	d(4)= 16 d(100)= $100^2 = 10000$

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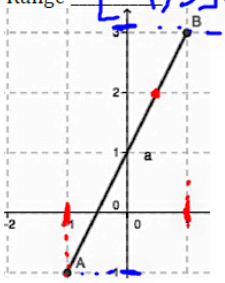
State the domain and range of each graph. Use interval notation where appropriate.

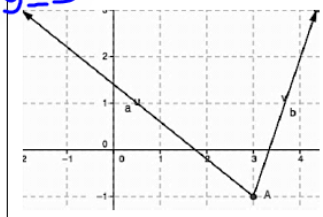
13a. Domain [-1, 1] or $-1 \le x \le 1$

b. Range [-1, 3] or $-1 \le y \le 3$



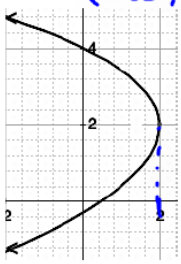
14a. Domain _____

b. Range _____



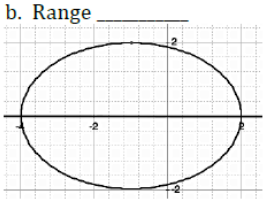
15a. Domain $(-\infty, 2]$ or $x \le 2$

b. Range $(-\infty, \infty)$ or All real #s



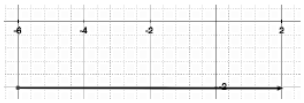
16a. Domain _____

b. Range _____



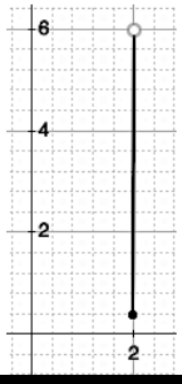
17a. Domain _____

b. Range _____



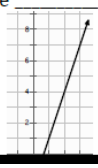
18a. Domain _____

b. Range _____



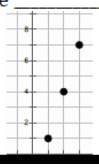
19a. Domain _____

b. Range _____



20a. Domain _____

b. Range _____



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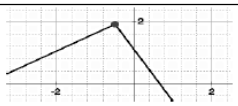
Ready

Topic: Recognizing functions

Identify which of the following representations are functions. If it is NOT a function state how you would fix it so it was.

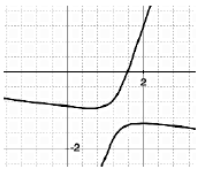
1. D = {(4,-1) (3, -6) (2, -1) (1, 2) (0, 4) (2, 5)}

2. The number of calories you have burned since midnight at any time during the day.

3. 

4.

x	-12	-8	-6	-4
$f(x)$	25	25	25	25

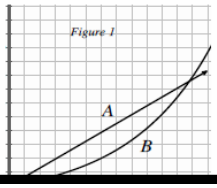
5. 

6. 

Set

Topic: Comparing rates of change in linear, quadratic, and exponential functions

The graph at the right shows a time vs. distance graph of two cars traveling in the same direction along the freeway.



7. Which car has the cruise control on? How do you know?

8. Which car is accelerating? How do you know?

Sep 15-8:09 AM

QUIZ #3 - Functions

Identify the following as linear, exponential, or quadratic.

1) $f(x) = x^2 + 8$

2) $g(x) = 4^x$

3) $h(x) = 7x - 4$

Dec 10-3:22 PM

1.7 How Does It Grow?

A Practice Understanding Task

HW pgs 33-36
SKIP pg. 37-39

For each relation given:

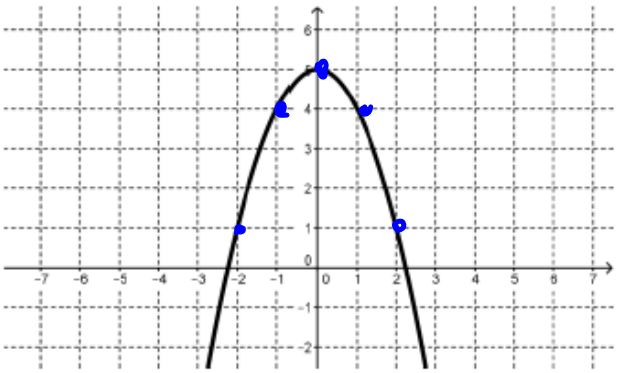
- a. Identify whether or not the relation is a function;
- b. Determine if the function is linear, exponential, quadratic or neither;
- c. Describe the type of growth
- d. Create one more representation for the relation.

+/- ·/÷

2nd diff same

1. A plumber charges a base fee of $55 for a service call plus $35 per hour for each hour worked during the service call. The relationship between the total price of the service call and the number of hours worked.

2.



a) yes

b) quadratic

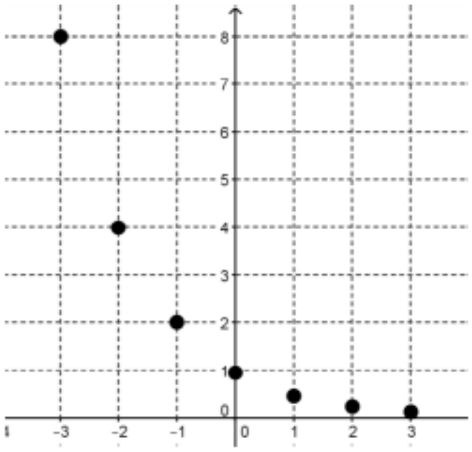
c) 1st diff. is linear; OR 2nd diff. is -2.

d)

x	y	
-2	1	
		+3
-1	4	
		+1
0	5	
		-1
1	4	
		-3
2	1	

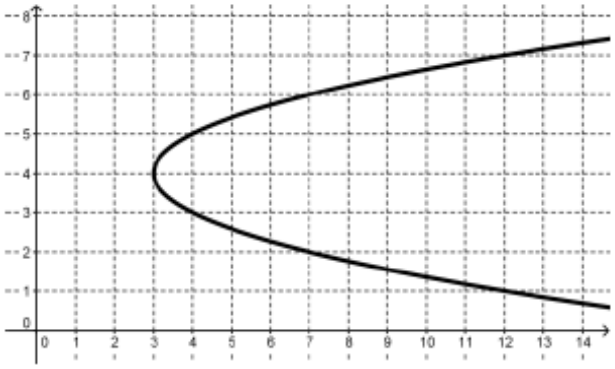
-2 -2

3.



4. $y = \frac{1}{3}(x-2)^2 + 4$

5.

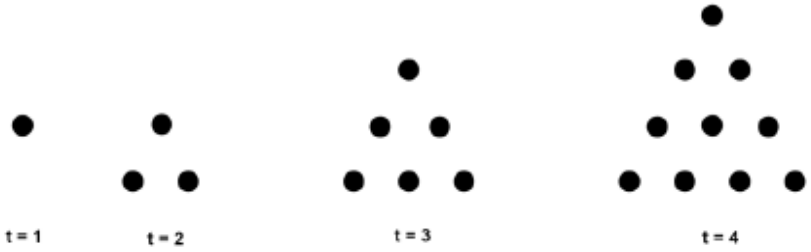


6. $y = \frac{1}{3}(x-2) + 4$

7. The relationship between the speed of a car and the distance it takes to stop when travelling at that speed.

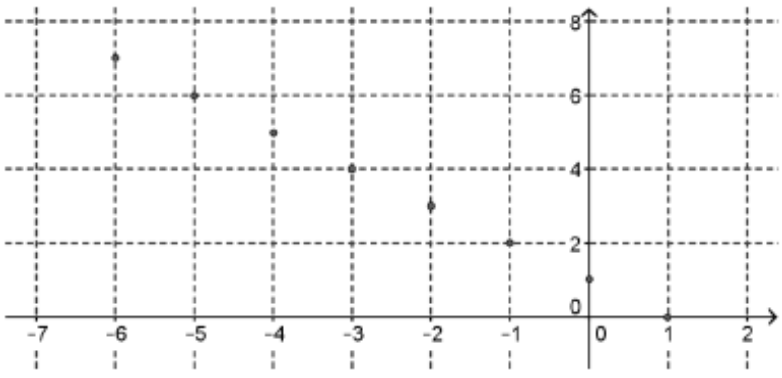
Speed (mph)	Stopping Distance (ft)
10	12.5
20	36.0
30	69.5
40	114.0
50	169.5
60	249.0
70	325.5

8. The relationship between the number of dots in the figure and the time, *t*.



9. The rate at which caffeine is eliminated from the bloodstream of an adult is about 15% per hour. The relationship between the amount of caffeine in the bloodstream and the number of hours from the time the adult drinks the caffeinated beverage.

10.



11. $y = (4x + 3)(x - 6)$

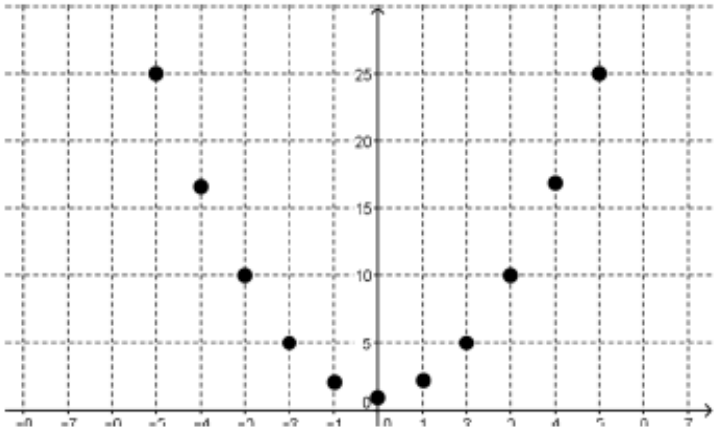
12. Mary Contrary wants to build a rectangular flower garden surrounded by a walkway 4 meters wide. The flower garden will be 6 meters longer than it is wide.

    a. The relationship between the width of the garden and the perimeter of the walkway.

    b. The relationship between the width of the garden and area of the walkway.

13. $y = \left(\frac{1}{3}\right)^{x-2} + 4$

14.



Homework/Classwork

Finish 1.7

Oct 21-8:47 AM