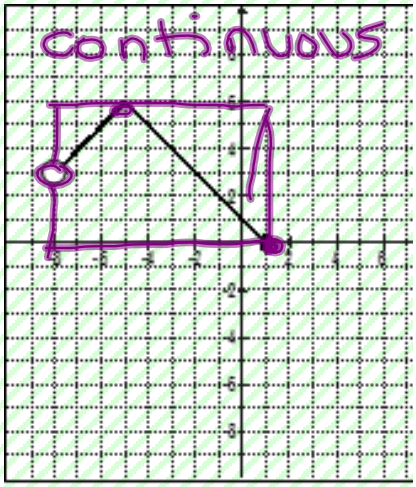
Objective:
You will be able to name important facts about the linear and quadratic parent function. You will also be able to identify graphs and equations as linear, quadratic, or neither.

Parent Functions Warm-Up

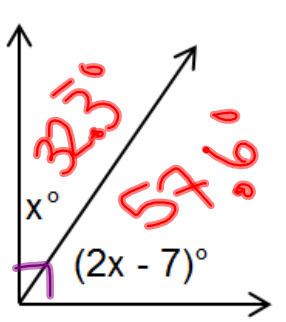
1. List the domain and range of the following graph.

D: $-8 < x \leq 1$

R: $0 \leq y \leq 6$



2. Using the diagram, find the measure of both angles



$x + 2x - 7 = 90$

$3x - 7 = 90$

$+7 \quad +7$

$\frac{3x}{3} = \frac{97}{3}$

$90 - 32.3$

Agenda

Warm-Up

HW Check

Notes

HW: Practice (ALL)

1. Continuous
   D: $1 \le x \le 7$
   R: $0 \le y \le 4$

2. Discrete
   D: $\{2\}$
   R: $\{-1, 0, 1, 2, 3, 4\}$

3. Continuous
   D: $-3 \le x < \infty$
   R: $-3 \le y \le 4$

4. Continuous
   D: $-7 \le x \le 6$
   R: $-5 \le y \le 4$

5. Discrete
   D: $\{-3, -2, -1, 0, 1, 2\}$
   R: $\{-1, 0, 1, 2, 3, 4\}$

6. Continuous
   D: $-2 \le x < \infty$
   R: $y = 1$
   $-1 \le y \le 1$

7. Continuous
   D: $\mathbb{R}$, all real numbers $-\infty < x < \infty$
   R: $-2 \le y < \infty$

8. Continuous
   D: $-3 \le x \le 3$
   R: $-3 \le y \le 3$

9. Continuous
   D: $-3 \le x \le 3$
   R: $0 \le y \le 3$

10. Discrete
    D: $\{-3, -2, -1, 1\}$
    R: $\{-2, -1, 2, 3, 4\}$

11. Continuous
    D: $\mathbb{R}$, all real numbers
    R: $\mathbb{R}$, all real numbers

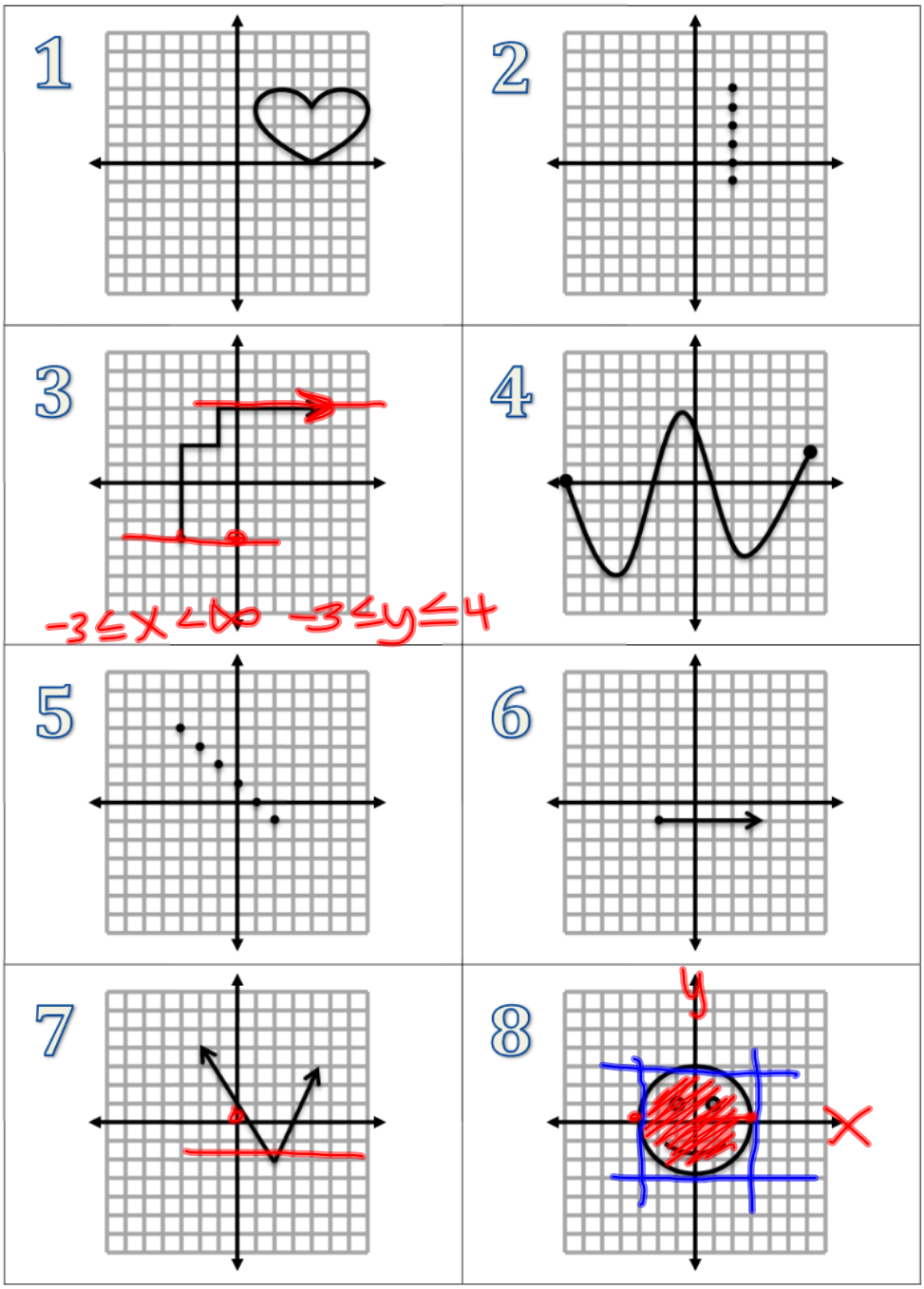
12. Continuous
    D: $-\infty < x \le 2$
    R: $-2 \le y < \infty$

13. Continuous
    D: $-3 \le x \le 2$
    R: $-3 \le y \le 2$

14. Continuous
    D: $\mathbb{R}$, all real numbers
    R: $-4 \le y < \infty$

15. Continuous
    D: $\mathbb{R}$, all real numbers
    R: $\mathbb{R}$, all real numbers

16. Continuous
    D: $-6 \le x \le 5$
    R: $-5 \le y \le 5$



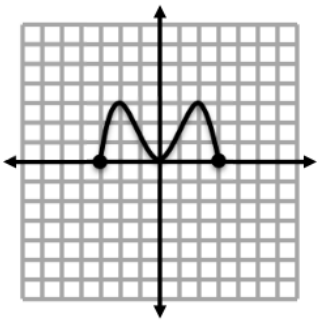
$-3 \le x < \infty$ $-3 \le y \le 4$

R: $-2 \le$

D: $-3 \le x \le 3$

R: $-3 \le y \le 3$

9



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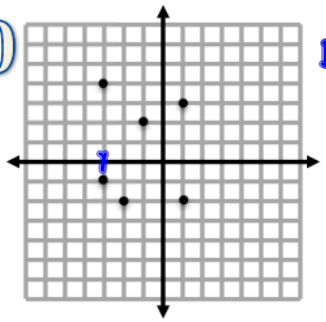
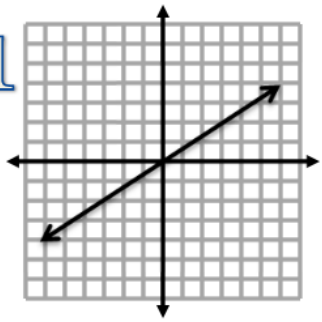


D: {-3, -2, -1, 1}

R: {-2, -1, 2, 3, 4}

11



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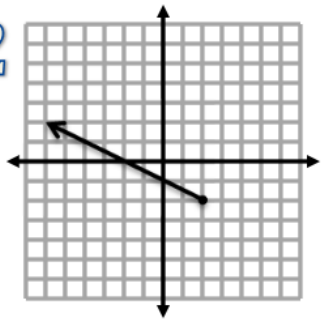

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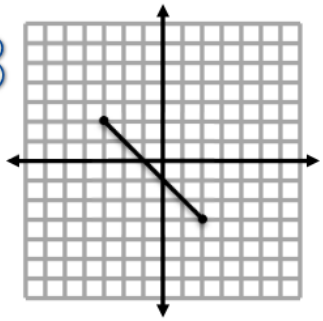

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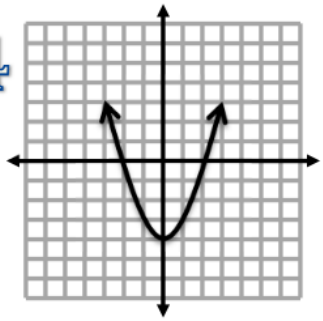

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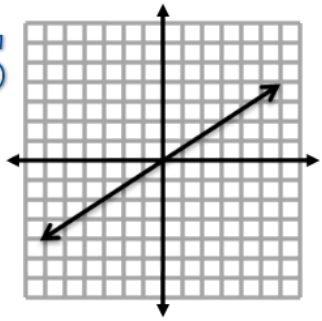

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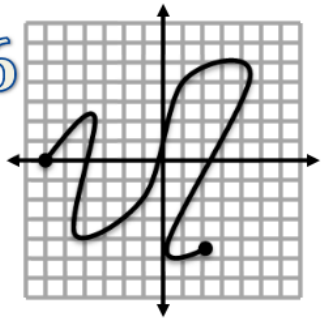


Parent Functions p. 30

name

Linear Parent Function

$y = -2$

equation

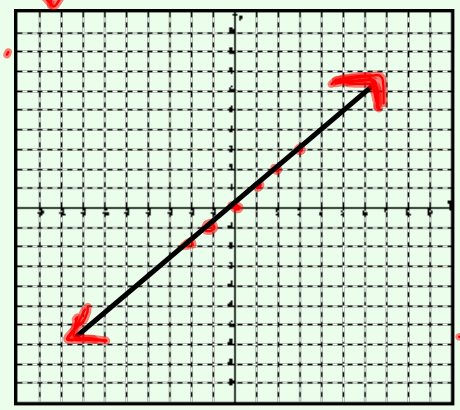
$y = x$

x	y
-2	-2
-1	-1
0	0
1	1
2	2
3	3

1.5 1.5

20 20

graph



Domain:
All real numbers
$\mathbb{R}$

Range:
All real #s
$\mathbb{R}$

Characteristics:
- Line
- passes thru the origin (0,0)
- increases from left to right

name

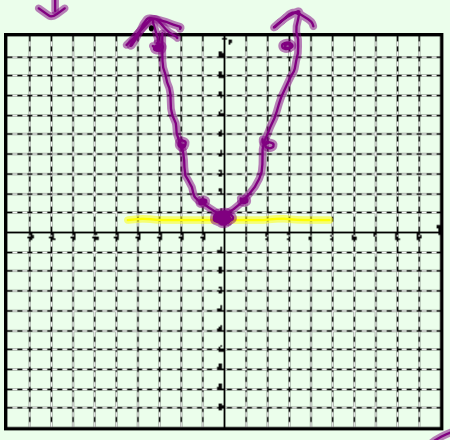
Quadratic Parent Function

$y = x^2$

equation

x	y
-2	4
-1	1
0	0
1	$1^2=1$
2	$2^2=4$
3	$3^2=9$

graph



Domain:
$-\infty < x < \infty$
$\mathbb{R}$

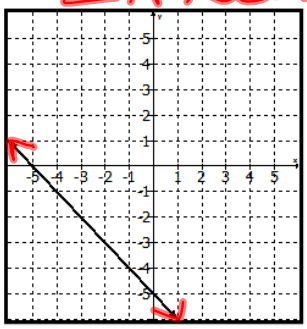
Range:
$0 \leq y < \infty$

Characteristics:
- U shaped
- Quadratic
- passes thru origin
- opens up

SHAPE

Determine if the graphs are linear (L), quadratic (Q), or neither (N).

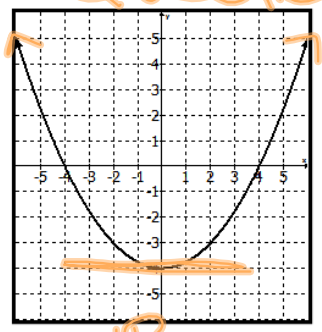
4. Linear



D: $\mathbb{R}$

R: $\mathbb{R}$

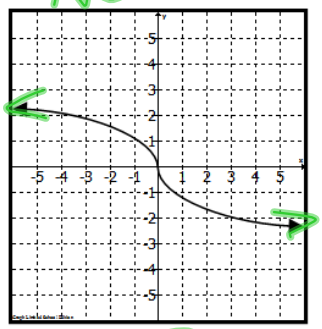
5. Quadratic



D: $\mathbb{R}$

R: $-4 \leq y$

6. Neither



D: $\mathbb{R}$

R: $\mathbb{R}$

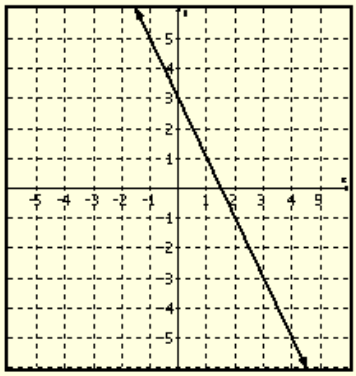
Algebra I - Unit 2: Topic 1

Practice - Domain and Range Using Parent Functions **(2 pages)** **No Textbook Correlation**

Name_____ Date _____ Period _____

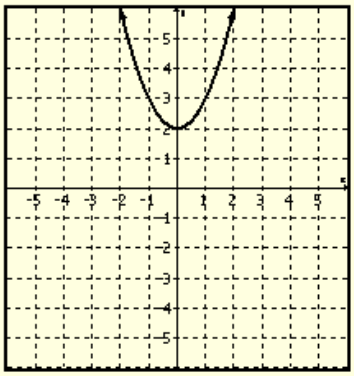
Determine if the graphs are linear (L), quadratic (Q), or neither (N). State the Domain and Range.

1.



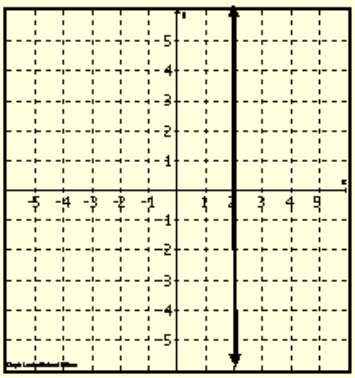
L/Q/N?	
Domain	
Range	

2.



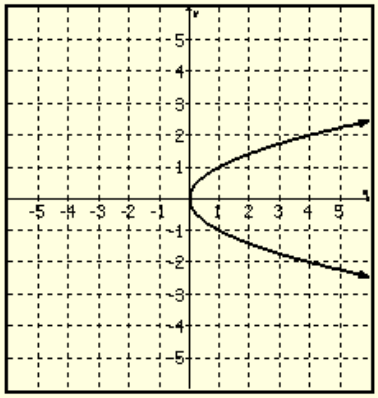
L/Q/N?	
Domain	
Range	

3.



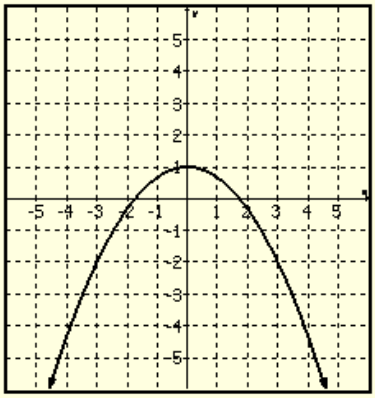
L/Q/N?	
Domain	
Range	

4.



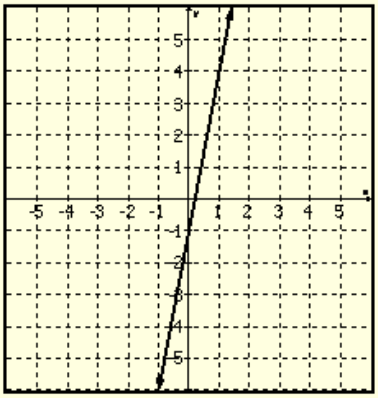
L/Q/N?	
Domain	
Range	

5.



L/Q/N?	
Domain	
Range	

6.



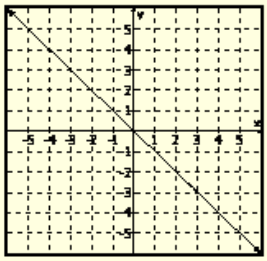
L/Q/N?	
Domain	
Range	

Algebra I - Unit 2: Topic 1

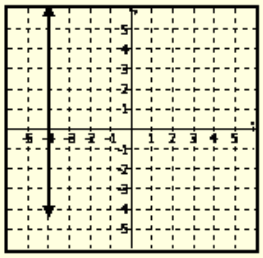
Answer the following.

7. Which graph below best represents the linear parent function?

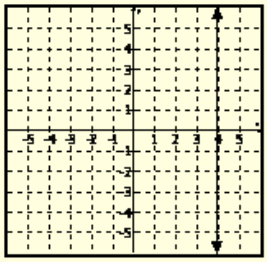
A



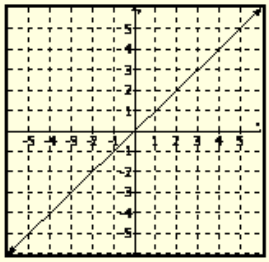
C



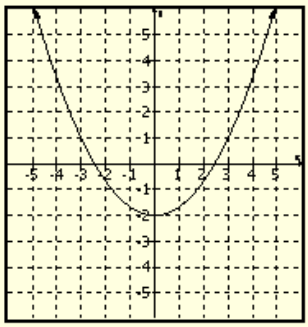
B



D

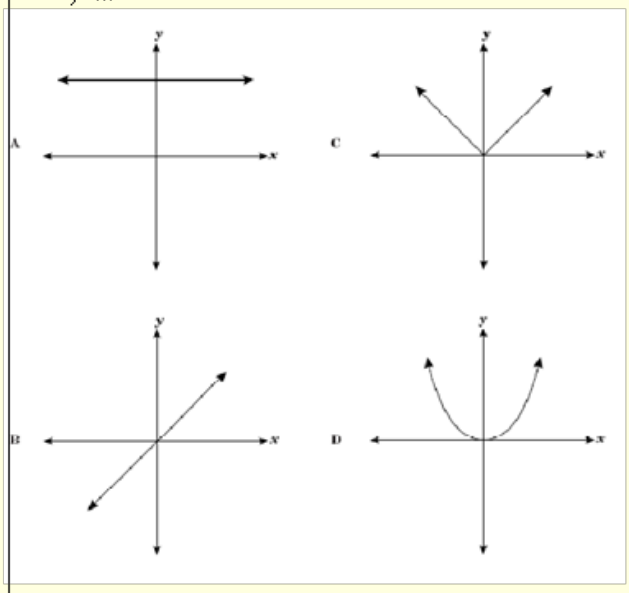


8. Which equation is the parent function of the graph represented below?

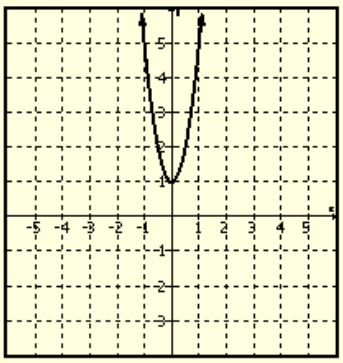


A $y = x$
B $y = |x|$
C $y = x^2$
D $y = \sqrt{x}$

9. Which is the best representation of the function $y=x$?



10. Which type of parent function is represented by the function graphed below?



A Exponential
B Absolute value
C Linear
D Quadratic

exit ticket

on a sticky note, solve the following problem

BE SURE TO WRITE YOUR NAME

2. Which of the following equations can be used to find the measure of two complementary angles, where the measure of one angle is 7 less than twice the other?

A. $3x - 7 = 90$
B. $7 - x = 90$
C. $2x - 7 = 90$
D. $2x = 90$