Pre-Calculus Assignment Sheet
Unit 1 - Parent Functions and their Graphs
August 26 – September 6, 2013

Date	Lesson	Assignment
Day 1 Monday Aug. 26	Introductory Activities	1. Print Unit 1 from Website www.thsprecalculus.weebly.com 2. get graph composition journal
Day 2 Tuesday Aug. 27	Domain/Range and Interval Notation	Complete Algebra Review Worksheet and Workshe pages 2 – 3
Day 3 Wednesday Aug. 28	Parent Functions, symmetry, even/odd functions and analyzing graphs of functions: max/min, zeros, average rate of change	pages 4 – 6
Day 4 Thursday Aug. 29	Continue Parent Functions, symmetry, even/odd functions an analyzing graphs of functions: max/min, zeros, average rate of change	Worksheet pages 4 - 6 Quiz tomorrow –study Parent Functions
Day 5 Friday Aug. 30	**Quiz - Parent Functions, symmetry, even/odd** Transformations of Parent Functions	Worksheets pages 7 - 10
Monday Sept. 2	**Holiday – Labor Day**	
Day 6 Tuesday Sept. 3	Transformations of Parent Functions (Continued)	Worksheets pages 7 - 10
Day 7 Wednesday Sept. 4	Writing Parent Transformation Equations **Quiz - Parent Transformations**	Worksheet page 11
Day 8 Thursday Sept. 5	Review for Test on Parents and Transformations Review Sections 1.1 - 1.6: Analyzing functions, characteristics of functions, parent functions and transformations PreAssessment Unit 2	Study for test
Day 9 Friday Sept.6	**Test on 1.1-1.6** Handout Project due on Day 20	Print Unit 2 from website www.thsprecalculus.weebly.com HW: pg. 48 (Vocabulary 1-6, extra practice, 1-33 (o), 39, 41.

* For additional out-of-class practice see Textbook sections 1.1 through 1.7 Some useful examples are: p.61 (problems #1 – 14, 31 – 35, 71 – 76)

Precalculus – Algebra Review Worksheet Do you remember???? Work your problems on your own paper.

1.) Given the following information, **write the equation** of the line described.

a.) The line passes through (6, -3) and (-5, 11)

b.) The line is perpendicular to 4x – 7y = 14 and passes through (11, 5)

2.) For each linear equation name the slope (*m*) and a point on the line. Do not manipulate the equation.

a.) y = 4x – 3
m= _____
pt. _____

b.) $y-5=-\frac{3}{4}(x+2)$
m= _____
pt. _____

c.) 3x – 4y = 21
m= _____
pt. _____

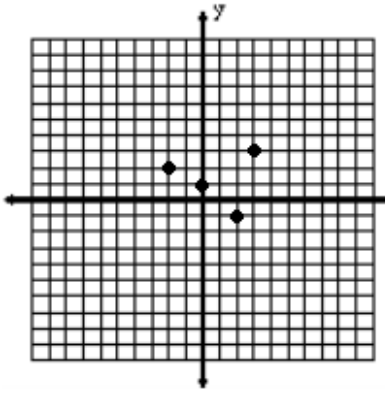
d.) y = 5
m= _____
pt. _____

e.) x = –12
m= _____
pt. _____

3.) Find the midpoint between. (-2, 7) and (1, -5).
4.) Write the ordered pair whose y-coordinate is 11 and x-coordinate is -4.
5.) Draw a Cartesian coordinate plane and label: the x-axis, the y-axis, the quadrants, and the origin.

Domain and Range Worksheet Tues, August 27th

1.

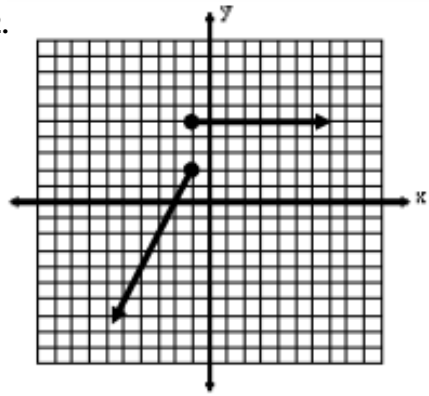


Domain _____

Range_____

Function? _____

2.

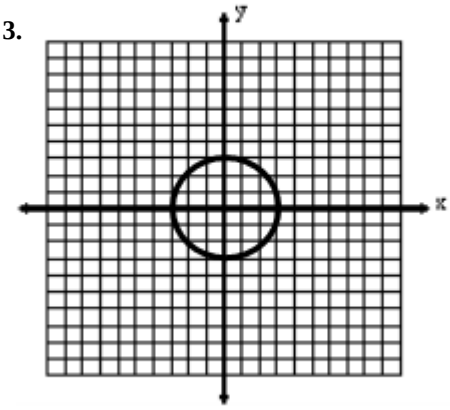


Domain _____

Range_____

Function? _____

3.

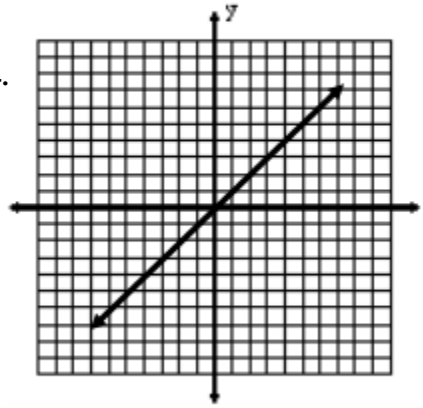


Domain _____

Range_____

Function? _____

4.

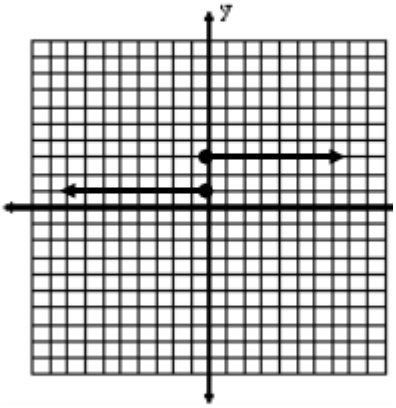


Domain _____

Range_____

Function? _____

5.

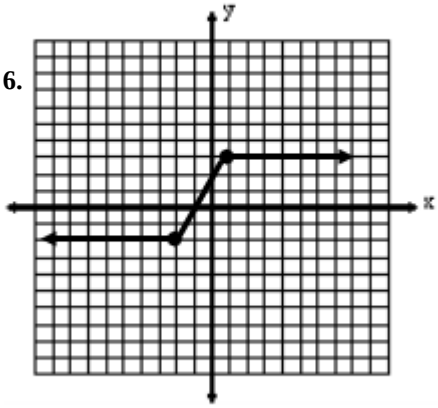


Domain _____

Range_____

Function? _____

6.

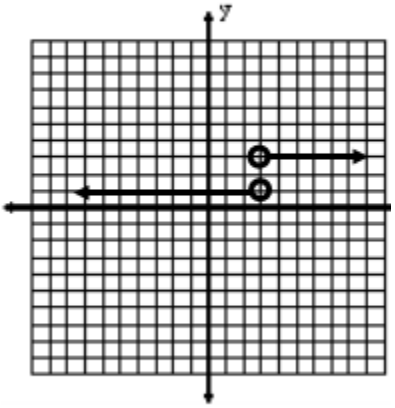


Domain _____

Range_____

Function? _____

7.

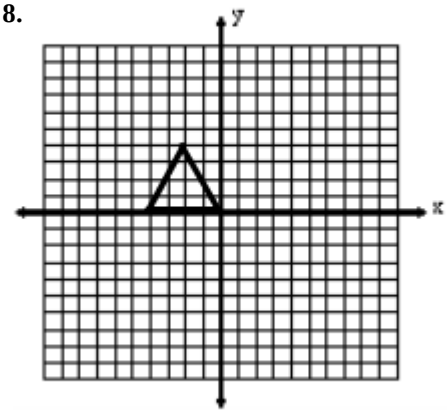


Domain _____

Range_____

Function? _____

8.

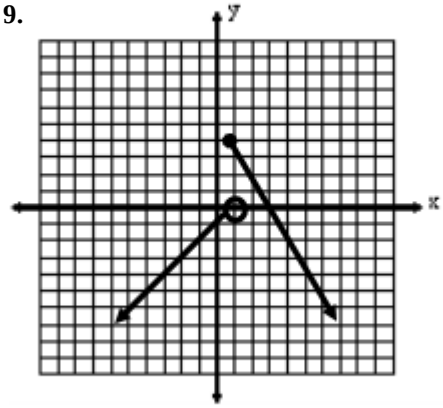


Domain _____

Range_____

Function? _____

9.

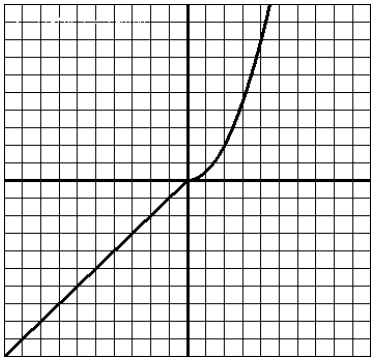


Domain _____

Range_____

Function? _____

10.

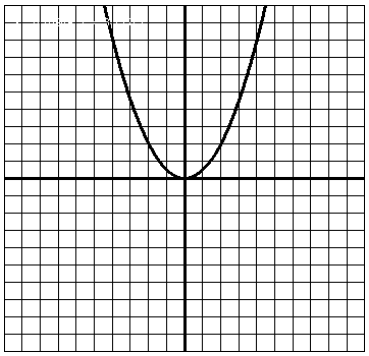


Domain _____

Range_____

Function? _____

11.

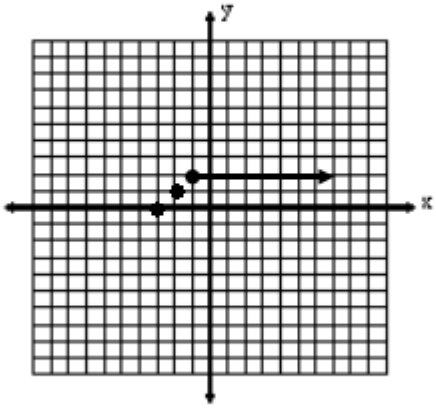


Domain _____

Range_____

Function? _____

12.

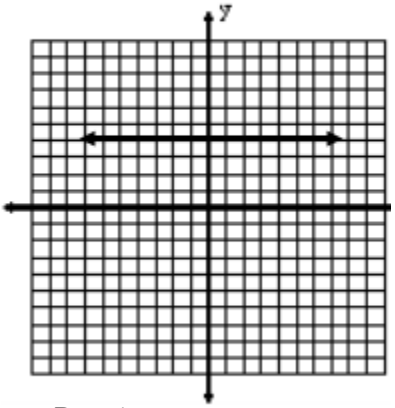


Domain _____

Range_____

Function? _____

13.

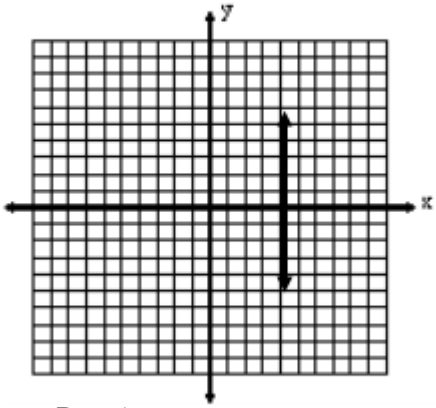


Domain _____

Range_____

Function? _____

14.

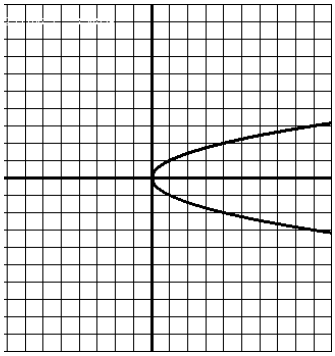


Domain _____

Range_____

Function? _____

15.

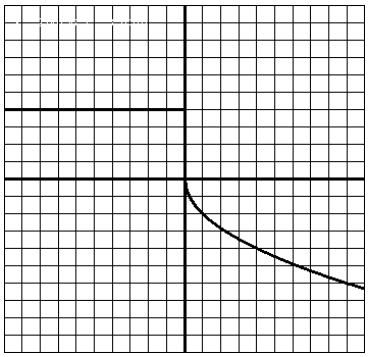


Domain _____

Range_____

Function? _____

16.

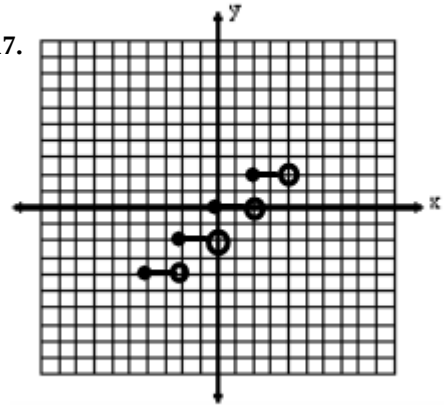


Domain _____

Range_____

Function? _____

17.

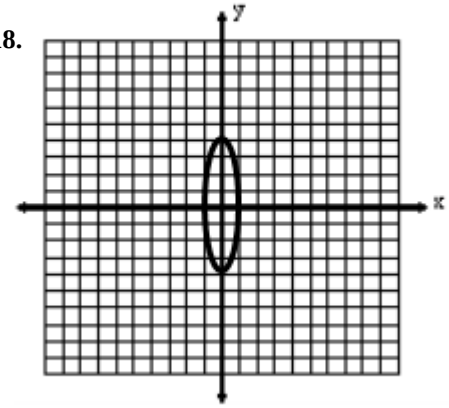


Domain _____

Range_____

Function? _____

18.

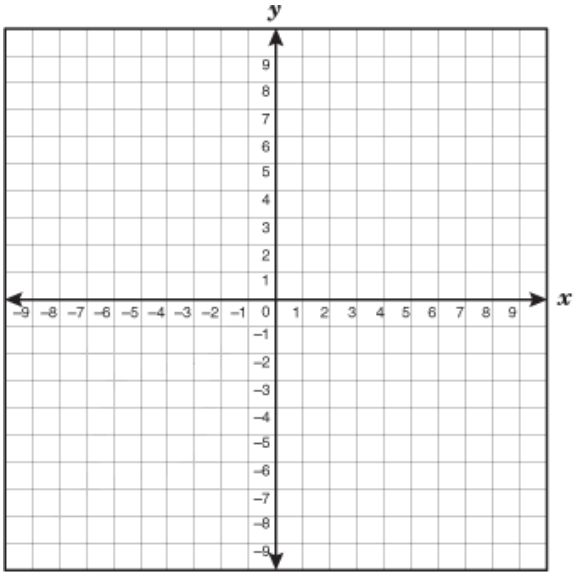


Domain _____

Range_____

Function? _____

Parent Functions Notes/ Study Guide Wed, August 28/Thursday August 29



1. Equation: _____

Name: _____

Domain: _____ Range: _____

y-intercept: _____ x-intercept: _____

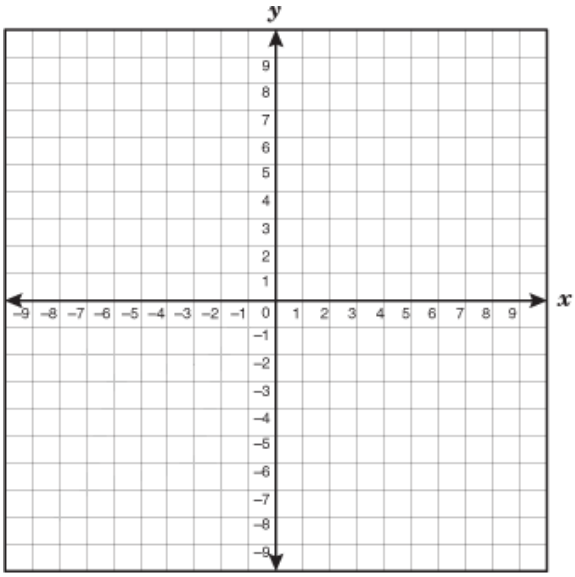
Symmetry: _____

Even, odd or neither: _____

One to one? :_____if yes, why_____

Increasing, Decreasing, or Constant, over what interval?:

_____



2. Equation: _____

Name: _____

Domain: _____ Range: _____

y-intercept: _____ x-intercept: _____

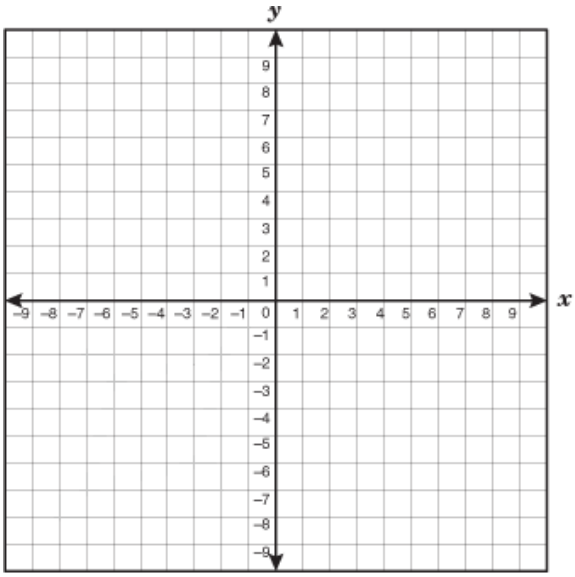
Symmetry: _____

Even, odd or neither: _____

One to one? :_____if yes, why_____

Increasing, Decreasing, or Constant, over what interval?:

_____



3. Equation: _____

Name: _____

Domain: _____ Range: _____

y-intercept: _____ x-intercept: _____

Symmetry: _____

Even, odd or neither: _____

One to one? :_____if yes, why_____

Increasing, Decreasing, or Constant, over what interval?:

_____

Maximum: _____ Minimum: _____

Ave Rate of Change: _____ Show Calculation beneath:

4. Equation: _____

Name: _____

Domain: _____ Range: _____

y-intercept: _____ x-intercept: _____

Symmetry: _____

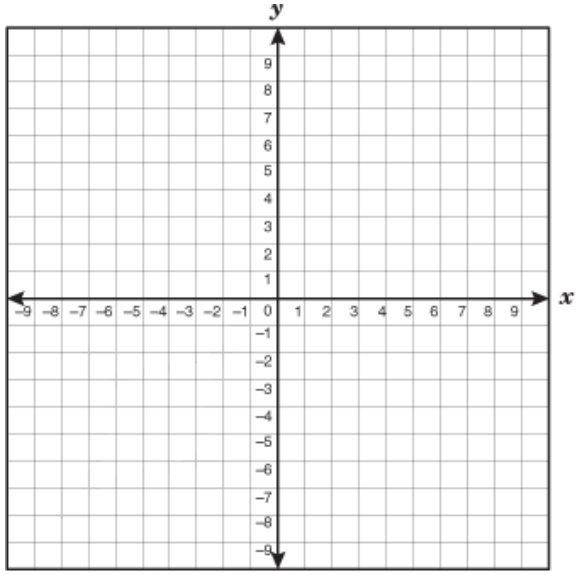
Even, odd or neither: _____

One to one? :_____if yes, why_____

Increasing, Decreasing, or Constant, over what interval?:

_____

Maximum: _____ Minimum: _____
Ave Rate of Change: _____ Show Calculation beneath:



5. Equation: _____

Name: _____

Domain: _____ Range: _____

y-intercept: _____ x-intercept: _____

Symmetry: _____

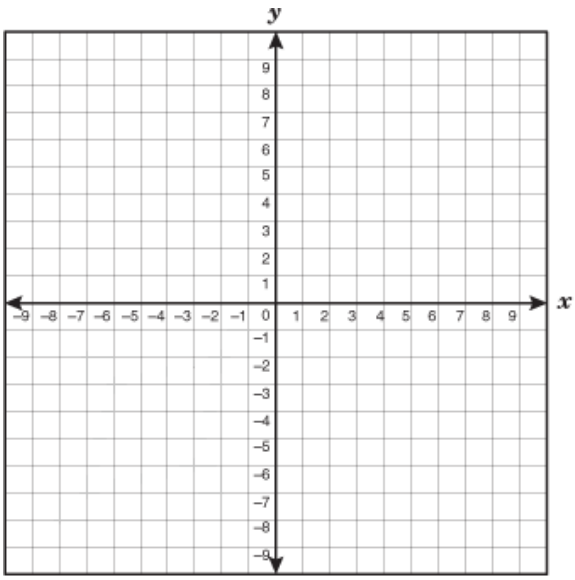
Even, odd or neither: _____

One to one? :_____if yes, why_____

Increasing, Decreasing, or Constant, over what interval?:

_____

Maximum: _____ Minimum: _____
Ave Rate of Change: _____ Show Calculation beneath:



6. Equation: _____

Name: _____

Domain: _____ Range: _____

y-intercept: _____ x-intercept: _____

Symmetry: _____

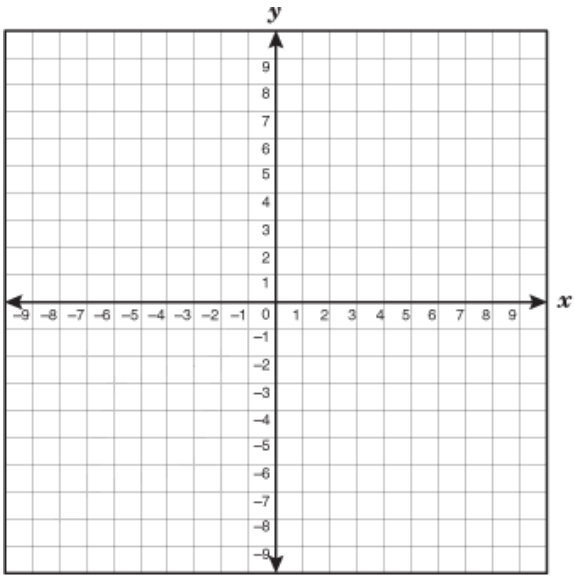
Even, odd or neither: _____

One to one? :_____if yes, why_____

Increasing, Decreasing, or Constant, over what interval?:

_____

Maximum: _____ Minimum: _____
Ave Rate of Change: _____ Show Calculation beneath:



7. Equation: _____

Name: _____

Domain: _____ Range: _____

y-intercept: _____ x-intercept: _____

Symmetry: _____

Even, odd or neither: _____

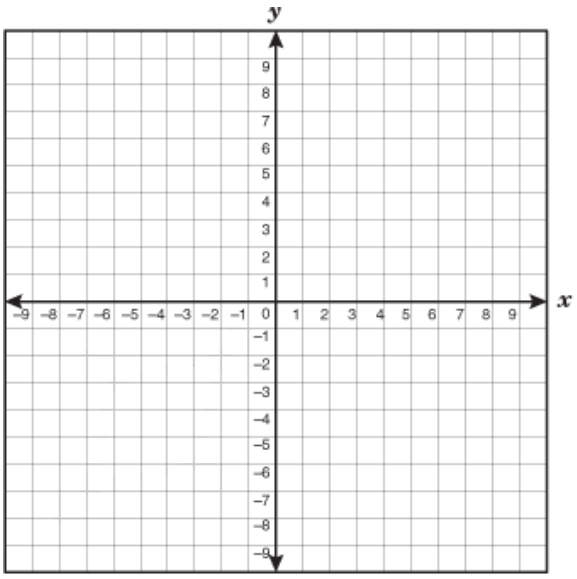
One to one? :_____if yes, why_____

Increasing, Decreasing, or Constant, over what interval?:

_____

Maximum: _____ Minimum: _____

Ave Rate of Change: _____ Show Calculation beneath:



8. Equation: _____

Name: _____

Domain: _____ Range: _____

y-intercept: _____ x-intercept: _____

Symmetry: _____

Even, odd or neither: _____

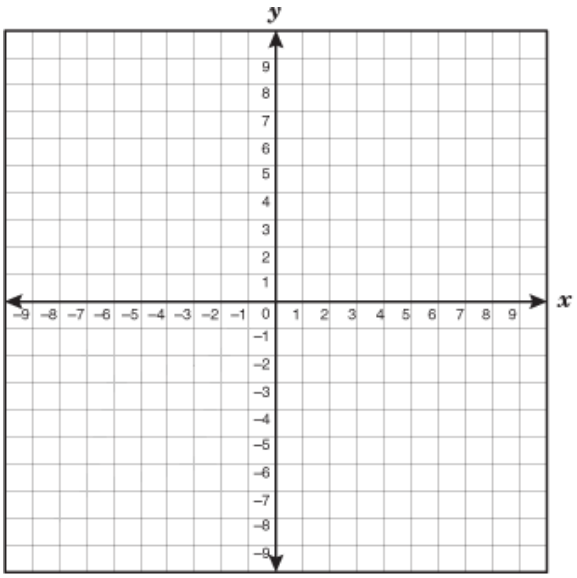
One to one? :_____if yes, why_____

Increasing, Decreasing, or Constant, over what interval?:

_____

Maximum: _____ Minimum: _____

Ave Rate of Change: _____ Show Calculation beneath:



9. Equation: _____

Name: _____

Domain: _____ Range: _____

y-intercept: _____ x-intercept: _____

Symmetry: _____

Even, odd or neither: _____

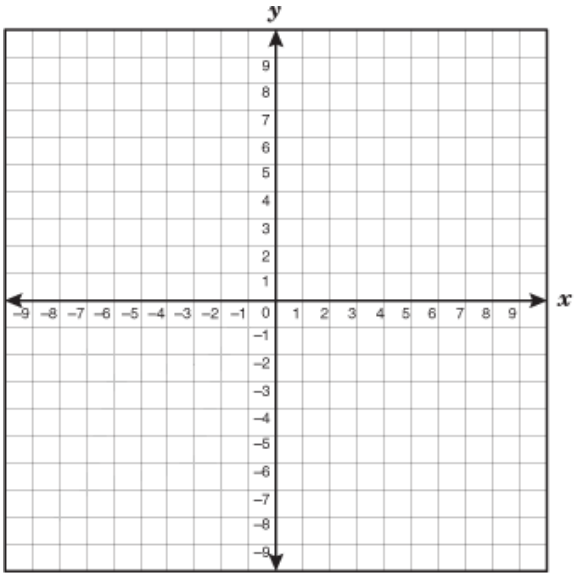
One to one? :_____if yes, why_____

Increasing, Decreasing, or Constant, over what interval?:

_____

Maximum: _____ Minimum: _____

Ave Rate of Change: _____ Show Calculation beneath:



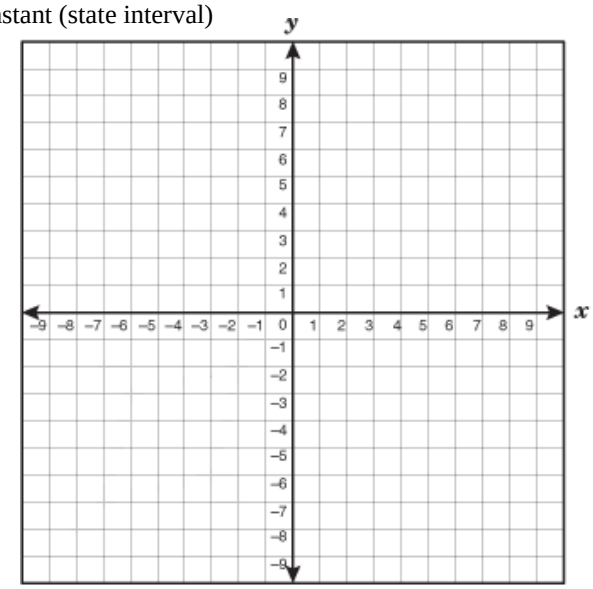
FUNCTION TRANSFORMATIONS: $y = a \cdot f(b(x-c)) + d$ Fri, Aug 30 and Tues, Sept 3

For each equation, **identify** its parent function by name and/or equation. **Graph the equation. For letters a to l answer the following:**

a: vertical stretch or shrink and/or reflection across x-axis
b: horizontal stretch or shrink and/or reflection across y-axis
c: horizontal shift (how much and which direction)
d. vertical shift (how much and which direction)
e. domain f. range g. y-intercept h. x-intercept i. symmetry (point, line or neither)
j. even, odd or neither k. one to one? l. incr., decr., or constant (state interval)

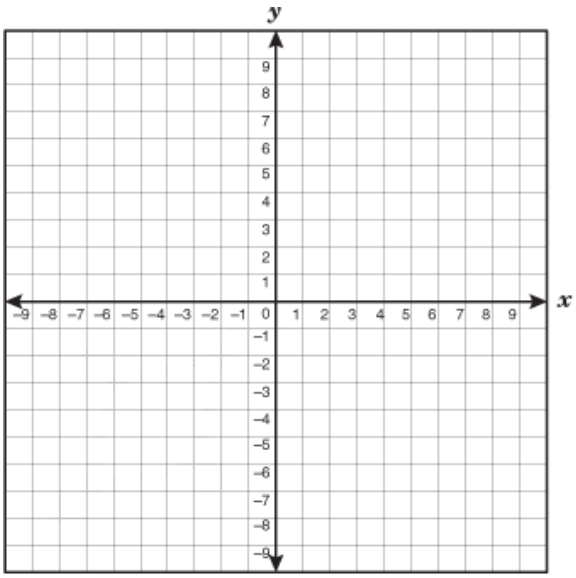
1. $y = |x-2| + 4$ Parent: _____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____



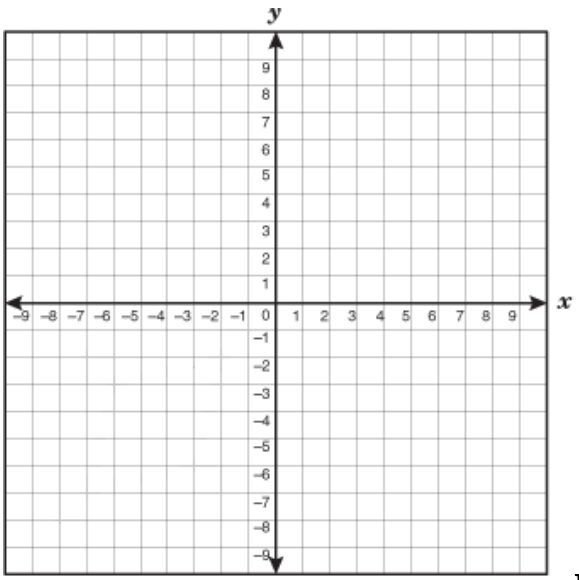
2. $y = -3(x-1)^3 + 2$ Parent: _____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____



3. $y = \sqrt{-(x-1)} + 4$ Parent: _____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____

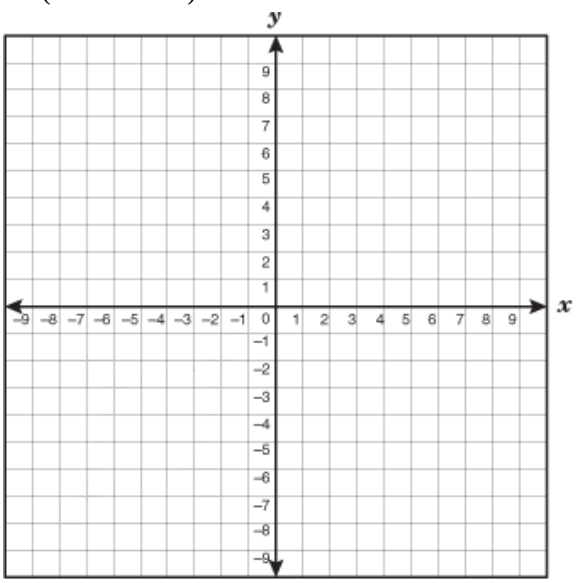


For each equation**, identify** its parent function by name and/or equation. **Graph the equation. For letters a to l answer the following:**

a: vertical stretch or shrink and/or reflection across x-axis
b: horizontal stretch or shrink and/or reflection across y-axis
c: horizontal shift (how much and which direction)
d. vertical shift (how much and which direction)
e. domain f. range g. y-intercept
h. x-intercept i. symmetry (point, line or neither)
j. even, odd or neither k. one to one? l. incr., decr., or constant (state interval)

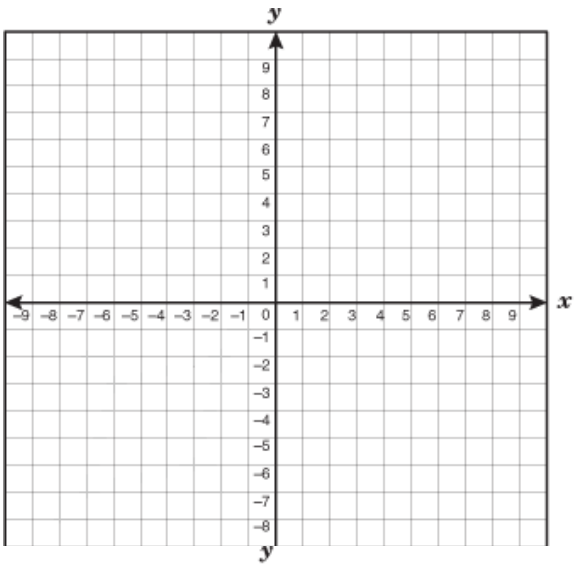
4. $y = (x-2)^2 - 6$ Parent: _____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____



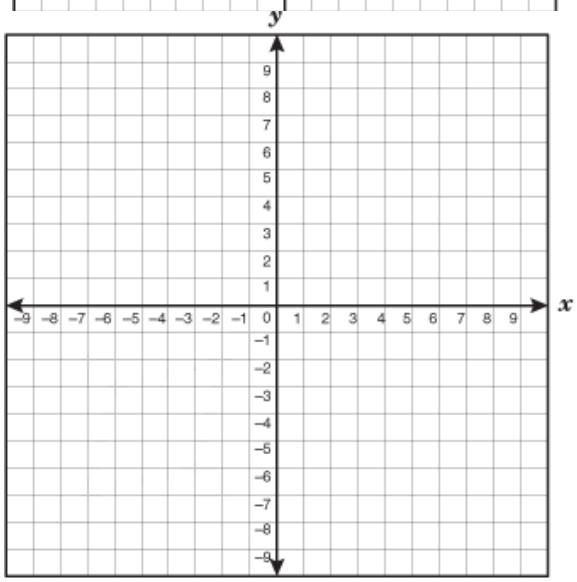
5. $y = \frac{1}{x+4} - 3$ Parent:_____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____



6. $y = 3\sqrt{5+x} - 3$ Parent: _____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____

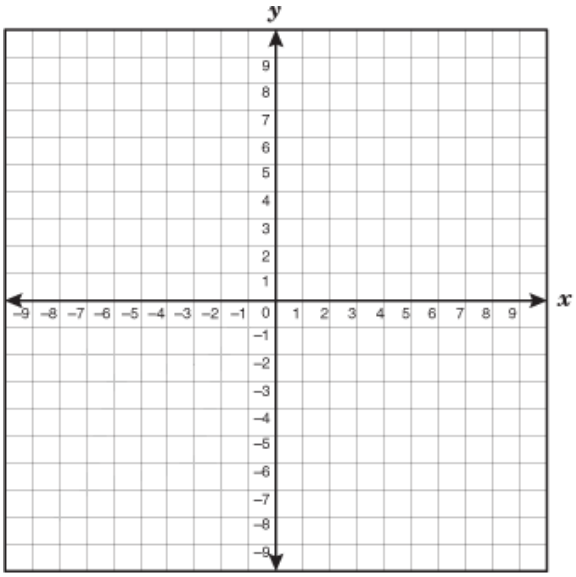


For each equation, **identify** its parent function by name and/or equation. **Graph the equation. For letters a to l answer the following:**

a: vertical stretch or shrink and/or reflection across x-axis
b: horizontal stretch or shrink and/or reflection across y-axis
c: horizontal shift (how much and which direction)
d. vertical shift (how much and which direction)
e. domain f. range g. y-intercept h. x-intercept i. symmetry (point, line or neither)
j. even, odd or neither k. one to one? l. incr., decr., or constant (state interval)

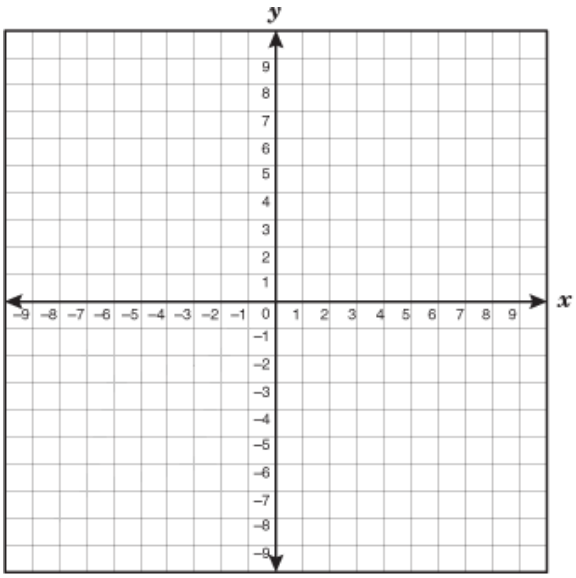
7. $y = -3|x| + 2$ Parent: _____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____



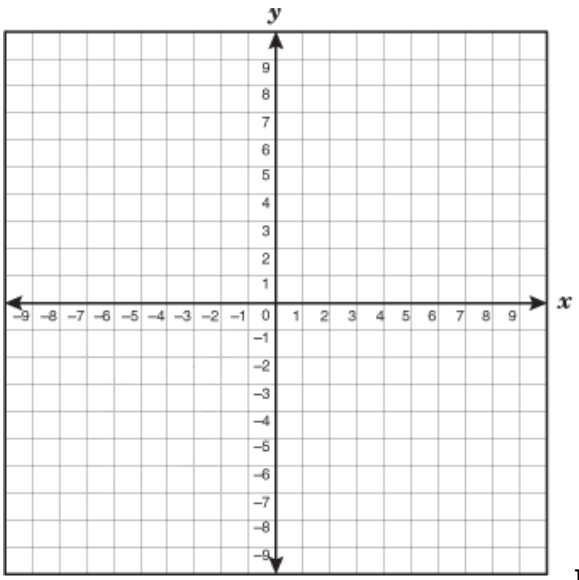
8. $y = (x-2)^3$ Parent: _____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____



9. $y = 3\sqrt{5+x} - 3$ Parent: _____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____

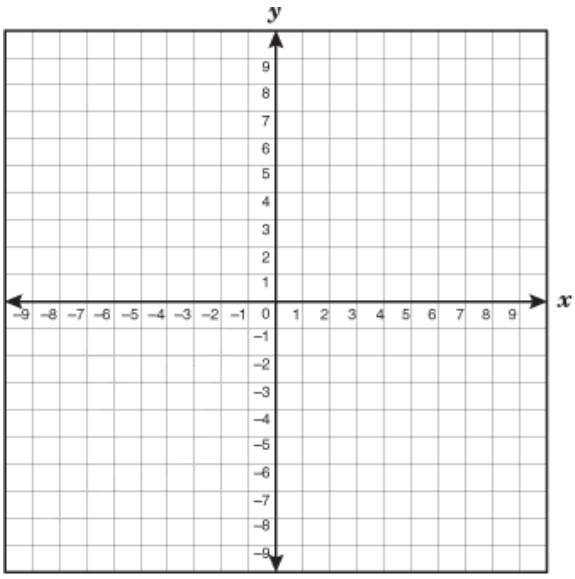


For each equation**, identify** its parent function by name and/or equation. **Graph the equation. For letters a to l answer the following:**

a: vertical stretch or shrink and/or reflection across x-axis
b: horizontal stretch or shrink and/or reflection across y-axis
c: horizontal shift (how much and which direction)
d. vertical shift (how much and which direction)
e. domain f. range g. y-intercept
h. x-intercept i. symmetry (point, line or neither)
j. even, odd or neither k. one to one? l. incr., decr., or constant (state interval)

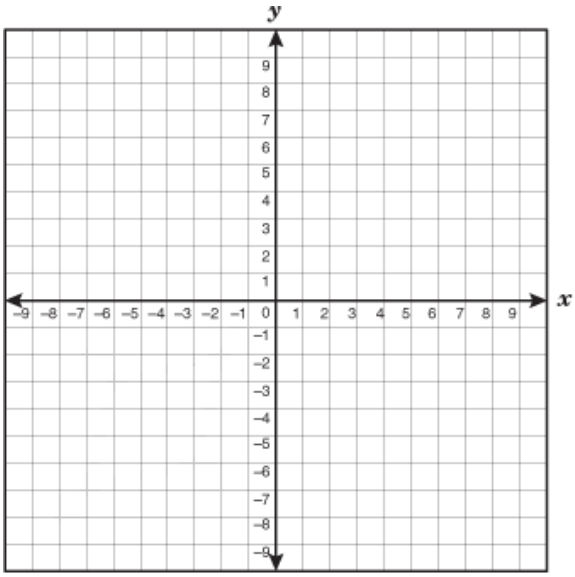
10. $y = -2(x+3)^2 + 5$ Parent: _____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____



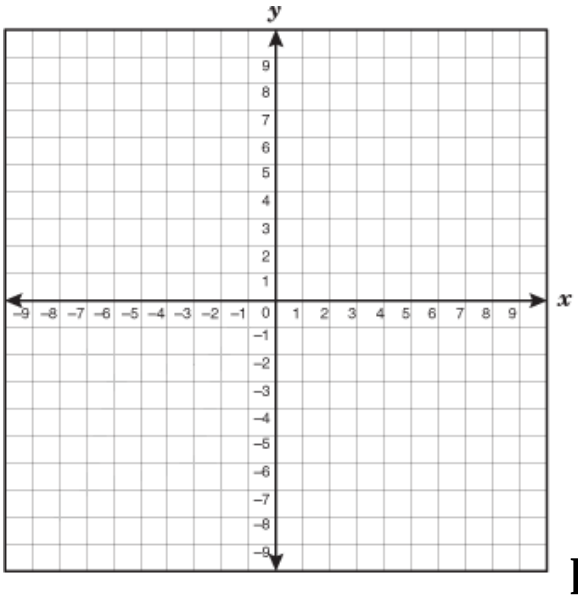
11. $y = \frac{-1}{x} + 3$ Parent: _____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____



12. $y - 3 = 2(x+1)$ Parent: _____

a. _____
b. _____
c. _____
d. _____
e. _____
f.. _____
g. _____
h. _____
i. _____
j. _____
k. _____
l. _____



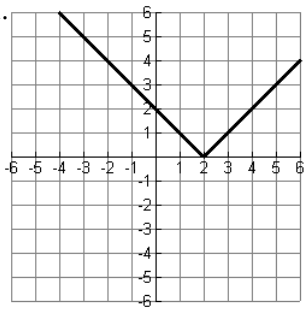
Writing Parent Transformation Equations Wed, Sept. 4

Write an Equation for a function that has a graph with the given characteristics.

1. The shape of $y = x^2$, but reflected over the x-axis and shifted right 8 units. 1. _____
2. The shape of $y = \sqrt{x}$, but shifted left 6 units and down 5 units. 2. _____
3. The shape of $y = |x|$, but shifted left 7 and up 2 units. 3. _____
4. The shape of $y = x^3$, but reflected over the x-axis and shifted right 5 units. 4. _____
5. The shape of $y = \frac{1}{x}$, but shrunk vertically by a factor of ½ and shifted down 3 units. 5. _____
6. The shape of $y = x^2$, but shifted right 6 units and up 2 units. 6. _____
7. The shape of $y = x^2$, but reflected over the x-axis and shifted right 3 and up 4 units. 7. _____
8. The shape of $y = |x|$, but stretched vertically by a factor of 5 and shifted down 4 units. 8. _____
9. The shape of $y = \sqrt{x}$, but reflected across the y-axis and shifted left 2 and down 4 units. 9. _____
10. The shape of $y = \frac{1}{x}$, but reflected across the y-axis and shifted up 7 units. 10. _____

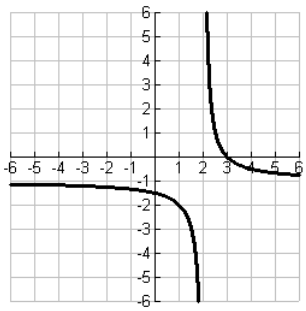
Write the equation for each function graphed.

11.



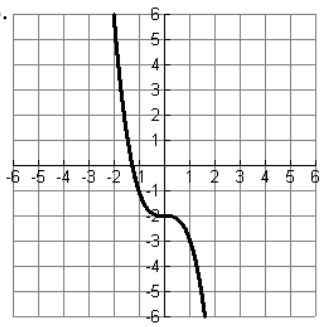
_____

12.



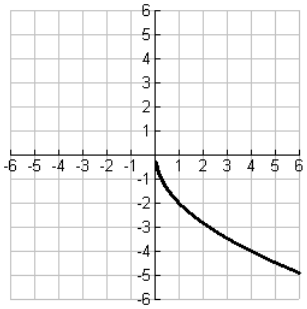
_____

13.



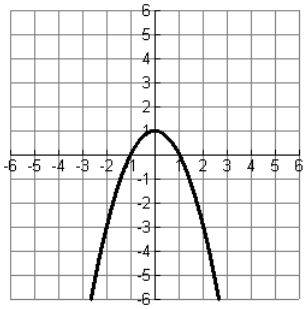
_____

14.



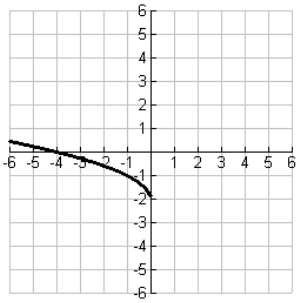
_____

15.



_____

16.



_____