

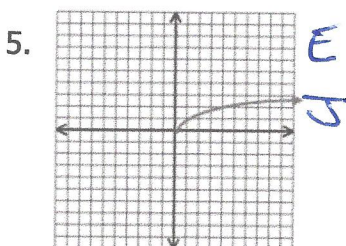
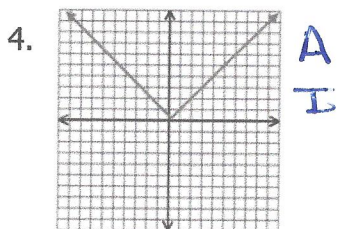
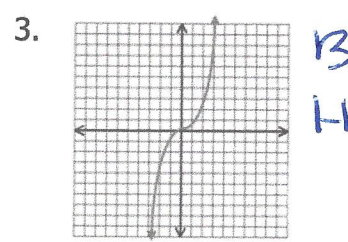
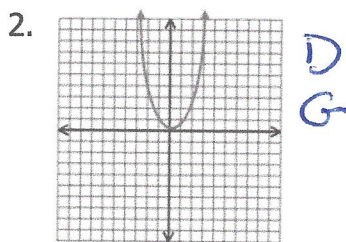
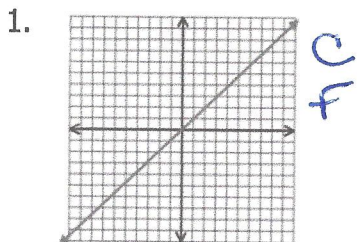
Key

# Transformations – Pulling it all together

Name: \_\_\_\_\_ Period: \_\_\_\_\_

Match the name & equation to the graph.

Names:	A) absolute value	B) cubic	C) linear	D) quadratic	E) radical
Equations:	F) $y = x$	G) $y = x^2$	H) $y = x^3$	I) $y =  x $	J) $y = \sqrt{x}$



Standard form of a transformation  $g(x) = af(x - h) + k$

Quadratic  
 $y = a(x - h)^2 + k$

Examples  
Cubic  
 $y = a(x - h)^3 + k$

Exponential  
 $y = a2^{x-h} + k$

- $a > 1$  stretch  $0 < a < 1$  compression
- horizontal shift,  $+$  right  $-$  left
- vertical shift  $+$  up  $-$  down
- 6) describe the effect of **a** on the graph.
- 7) describe the effect of **h** on the graph.
- 8) describe the effect of **k** on the graph.

if **a** is negative, function flips over x axis.

# Transformations – Pulling it all together

Identify the parent function name and describe the transformation for each function.

9.  $g(x) = -3(x-1)^2 - 6$  Name Quadratic  
 Transformations flip over x axis, right 1, down 6 stretch factor of 3
10.  $f(x) = 5(x-2)^3 - 11$  Name Cubic  
 Transformations stretch compression by factor of 5, right 2 down 11
11.  $h(x) = \frac{2}{3}|x+6|$  Name Absolute Value  
 Transformations compression by factor of 2/3 left 6
12.  $f(x) = x + 6$  Name Linear  
 Transformations up 6 units

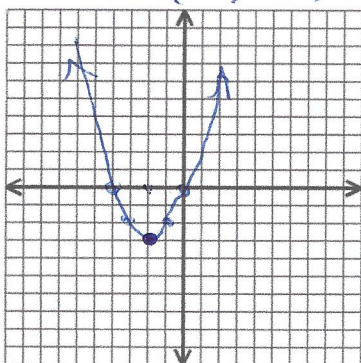
13. What is the effect on the graph of the function  $y = x^2 + 2$  when it is changed to  $y = x^2 - 3$ ?

shift down 5 units

Name the Parent Function. List the transformations. Graph each equation.

14.  $y = (x+2)^2 - 3$

vertex (-2, -3)

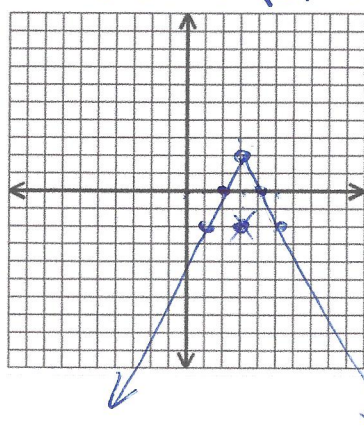


Parent Function: QUADRATIC  
 Transformations: left 2, down 3

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

15.  $y = -2|x - 3| + 2$

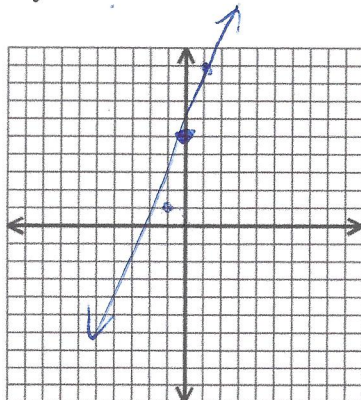
vertex (3, 2)



Parent Function: absolute value  
 Transformations: R3, U2, f, comp factor 2

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

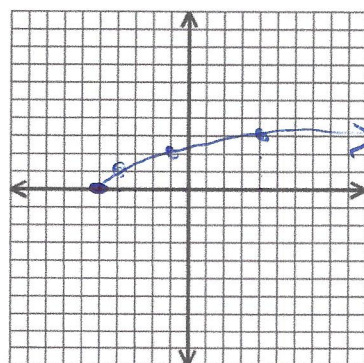
16.  $y = 4x + 5$



Parent Function: linear  
 Transformations:

x	y
-2	-3
-1	1
0	5
1	9
2	13

17.  $y = \sqrt{x+5}$



Parent Function: radical  
 Transformations: R5

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