

2.6 Parent Function Worksheet

Name Key Pd.

#1-7 Give the name of the parent function and describe the transformation represented. Identify the domain and range of the function.

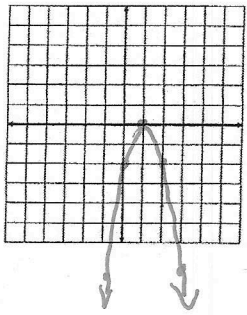
1. $g(x) = x^2 - 1$ Name: quadratic Transformation: down 1
 Domain: $(-\infty, \infty)$ Range: $[-1, \infty)$
2. $f(x) = 2|x-1|$ Name: Absolute Value Transformation: vertical stretch by 2
 Domain: $(-\infty, \infty)$ Range: $[0, \infty)$
 right 1
3. $h(x) = \sqrt{x+2}$ Name: Sq. Root Transformation: left 2
 Domain: $[-2, \infty)$ Range: $(-\infty, \infty)$
4. $g(x) = x^3 + 3$ Name: Cubic Transformation: down 3
 Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$
5. $g(x) = x^2 - 5$ Name: Quadratic Transformation: down 5
 Domain: $(-\infty, \infty)$ Range: $[-5, \infty)$
6. $f(x) = |x + 5| - 2$ Name: Abs. Value Transformation: left 5; down 2
 Domain: $(-\infty, \infty)$ Range: $[-2, \infty)$
7. $h(x) = \frac{1}{2}x^3 - 1$ Name: Cubic Transformation: Vertical shrink by $\frac{1}{2}$
 Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$
 down 1

#8 - 12 Given the parent function and a description of the transformation, write the equation of the transformed function, $f(x)$.

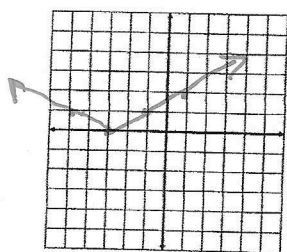
8. Absolute value—vertical shift up 5, horizontal shift right 3. $f(x) = |x - 3| + 5$
9. Radical vertical shrink by $\frac{2}{5}$ $f(x) = \frac{2}{5}\sqrt{x}$
10. Cubic—reflected over the x axis and vertical shift down 2 $f(x) = -(x)^3 - 2$
11. Linear—vertical stretch by 8 $f(x) = 8x$
12. Quadratic—vertical shrink by $\frac{1}{2}$, horizontal shift left 8. $f(x) = \frac{1}{2}(x + 8)^2$

Sketch a graph of each function. Describe the transformation from the parent function. Then write the domain and range.

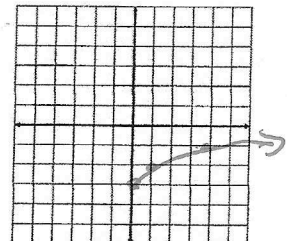
1. $y = -2(x-1)^2$ *right 1*
vert. stretch 2.
reflect x-axis
 Transformation: _____
 Domain: $(-\infty, \infty)$
 Range: $(-\infty, 0]$



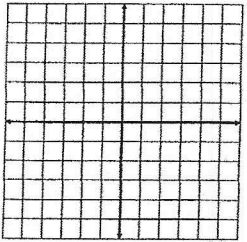
2. $y = 1/2|x+3|$ *vert. stretch 1/2*
 Transformation: *left 3*
 Domain: $(-\infty, \infty)$
 Range: $[0, \infty)$



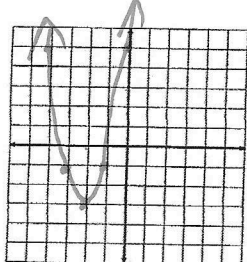
3. $y = \sqrt{x} - 3$
 Transformation: *down 3*
 Domain: $[0, \infty)$
 Range: $[-3, \infty)$



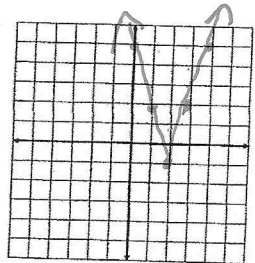
4. $y = x^3 + 1$
 Transformation: *up 1*
 Domain: $(-\infty, \infty)$
 Range: $(-\infty, \infty)$



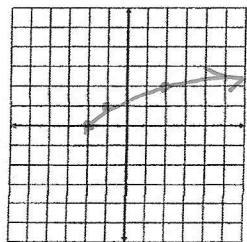
5. $y = 2(x+2)^2 - 3$ *vert. stretch 2*
left 2
down 3
 Transformation: _____
 Domain: $(-\infty, \infty)$
 Range: $[-3, \infty)$



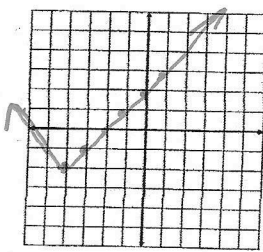
6. $y = 3|x-2| - 1$ *vert. stretch by 3*
right 2
down 1
 Transformation: _____
 Domain: $(-\infty, \infty)$
 Range: $[-1, \infty)$



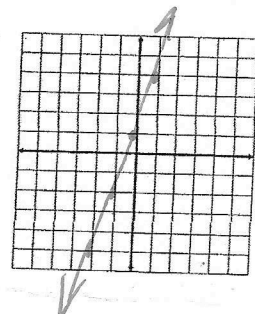
7. $y = \sqrt{x+2}$
 Transformation: *left 2*
 Domain: $[-2, \infty)$
 Range: $[0, \infty)$



8. $y = |x+4| - 2$ *left 4*
down 2
 Transformation: _____
 Domain: $(-\infty, \infty)$
 Range: $[-2, \infty)$



9. $y = 3x - 1$ *vert. stretch 3*
down 1
 Transformation: _____
 Domain: $(-\infty, \infty)$
 Range: $(-\infty, \infty)$



2.6 Parent Function Worksheet

Name _____ Pd. _____

1- 7 Give the name of the parent function and describe the transformation represented
Identify the domain and range of the function

1. $g(x) = x^2 - 1$ Name: _____ Transformation: _____

Domain : _____ Range : _____

2. $f(x) = 2|x - 1|$ Name: _____ Transformation: _____

Domain : _____ Range : _____

3. $h(x) = \sqrt{x - 2}$ Name: _____ Transformation: _____

Domain : _____ Range : _____

4. $g(x) = x^3 + 3$ Name: _____ Transformation: _____

Domain : _____ Range : _____

5. $g(x) = x^2 - 5$ Name: _____ Transformation: _____

Domain : _____ Range : _____

6. $f(x) = |x + 5| - 2$ Name: _____ Transformation: _____

Domain : _____ Range : _____

7. $h(x) = \frac{1}{2}x^3 - 1$ Name: _____ Transformation: _____

Domain : _____ Range : _____

#8 - 12 Given the parent function and a description of the transformation, write the equation of the transformed function, $f(x)$.

8. Absolute value—vertical shift up 5, horizontal shift right 3. _____

9. Radical vertical shrink by $\frac{2}{5}$ _____

10. Cubic—reflected over the x axis and vertical shift down 2 _____

11. Linear—vertical stretch by 8 _____

12. Quadratic—vertical shrink by $\frac{1}{2}$, horizontal shift left 8. _____

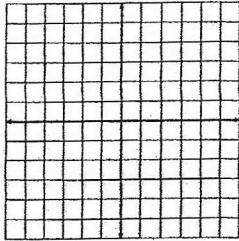
Sketch a graph of each function. Describe the transformation from the parent function. Then write the domain and range.

1. $y = -2(x-1)^2$

Transformation: _____

Domain: _____

Range: _____

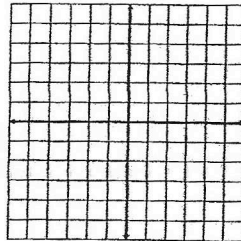


2. $y = 1/2|x+3|$

Transformation: _____

Domain: _____

Range: _____

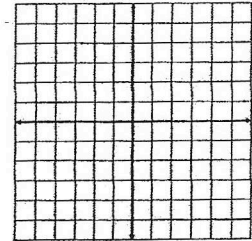


3. $y = \sqrt{x} - 3$

Transformation: _____

Domain: _____

Range: _____

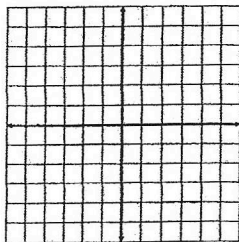


4. $y = x^3 + 1$

Transformation: _____

Domain: _____

Range: _____

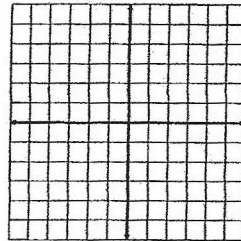


5. $y = 2(x+2)^2 - 3$

Transformation: _____

Domain: _____

Range: _____

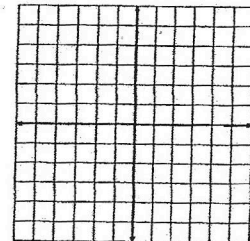


6. $y = 3|x-2| - 1$

Transformation: _____

Domain: _____

Range: _____

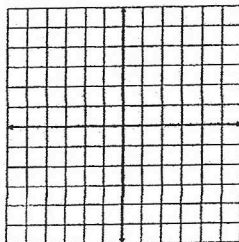


7. $y = \sqrt{x+2}$

Transformation: _____

Domain: _____

Range: _____

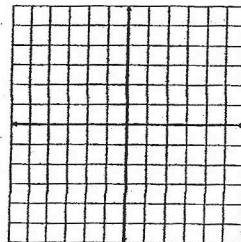


8. $y = |x+4| - 2$

Transformation: _____

Domain: _____

Range: _____



9. $y = 3x - 1$

Transformation: _____

Domain: _____

Range: _____

