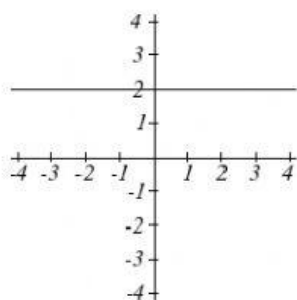


Graphs of the Parent Functions

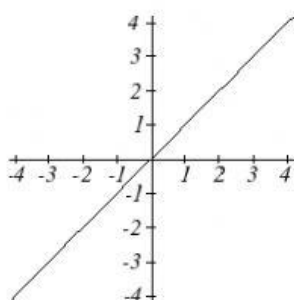
Constant Function: $f(x) = 2$



Domain: $(-\infty, \infty)$

Range: $\{2\}$

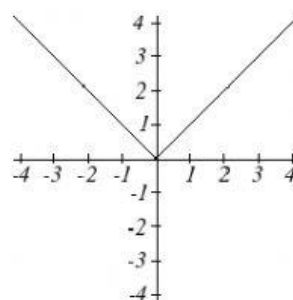
Identity: $f(x) = x$



Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

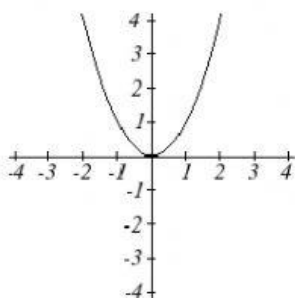
Absolute Value: $f(x) = |x|$



Domain: $(-\infty, \infty)$

Range: $[0, \infty)$

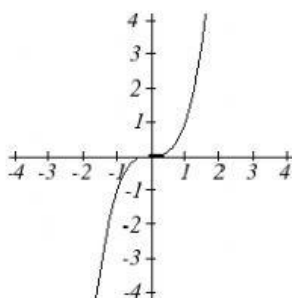
Quadratic: $f(x) = x^2$



Domain: $(-\infty, \infty)$

Range: $[0, \infty)$

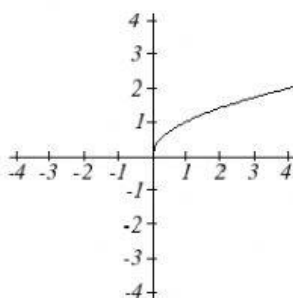
Cubic: $f(x) = x^3$



Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

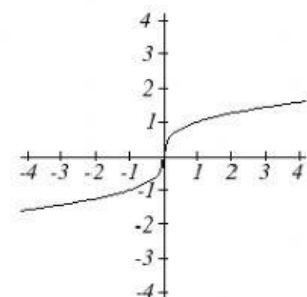
Square root: $f(x) = \sqrt{x}$



Domain: $[0, \infty)$

Range: $[0, \infty)$

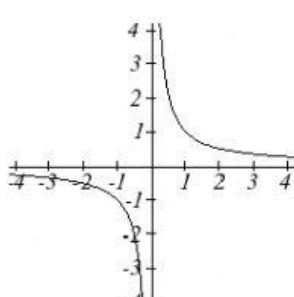
Cube root: $f(x) = \sqrt[3]{x}$



Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

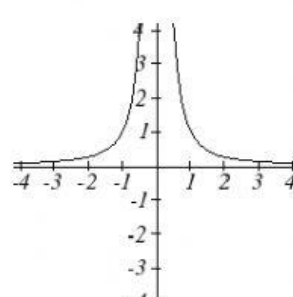
Reciprocal: $f(x) = \frac{1}{x}$



Domain: $(-\infty, 0) \cup (0, \infty)$

Range: $(-\infty, 0) \cup (0, \infty)$

Reciprocal squared: $f(x) = \frac{1}{x^2}$



Domain: $(-\infty, 0) \cup (0, \infty)$

Range: $(0, \infty)$

HOMEWORK:

1. Match each function name with its equation.

- a. $y = x$
- b. $y = x^3$
- c. $y = \sqrt[3]{x}$
- d. $y = \frac{1}{x}$
- e. $y = x^2$
- f. $y = \sqrt{x}$
- g. $y = |x|$
- h. $y = \frac{1}{x^2}$

- i. Cube root
- ii. Reciprocal
- iii. Linear
- iv. Square Root
- v. Absolute Value
- vi. Quadratic
- vii. Reciprocal Squared
- viii. Cubic

2. For each graph with its equation.

a. $y = x$

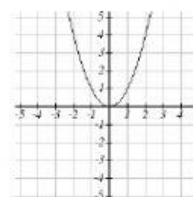
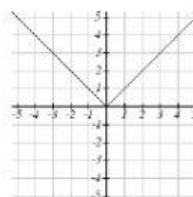
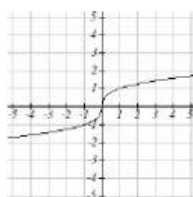
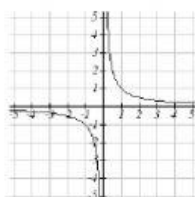
i.

ii.

iii.

iv.

b. $y = x^3$



c. $y = \sqrt[3]{x}$

d. $y = \frac{1}{x}$

e. $y = x^2$

f. $y = \sqrt{x}$

g. $y = |x|$

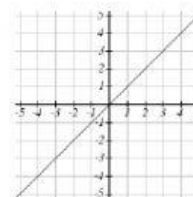
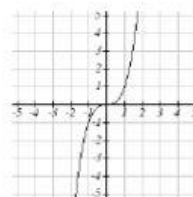
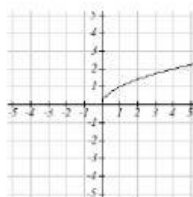
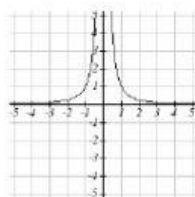
h. $y = \frac{1}{x^2}$

v.

vi.

vii.

viii.



3. Match each table with its equation.

a. $y = x^2$

b. $y = x$

c. $y = \sqrt{x}$

d. $y = 1/x$

e. $y = |x|$

f. $y = x^3$

i.

In	Out
-2	-0.5
-1	-1
0	—
1	1
2	0.5
3	0.33

ii.

In	Out
-2	-2
-1	-1
0	0
1	1
2	2
3	3

iii.

In	Out
-2	-8
-1	-1
0	0
1	1
2	8
3	27

iv.

In	Out
-2	4
-1	1
0	0
1	1
2	4
3	9

v.

In	Out
-2	—
-1	—
0	0
1	1
4	2
9	3

vi.

In	Out
-2	2
-1	1
0	0
1	1
2	2
3	3