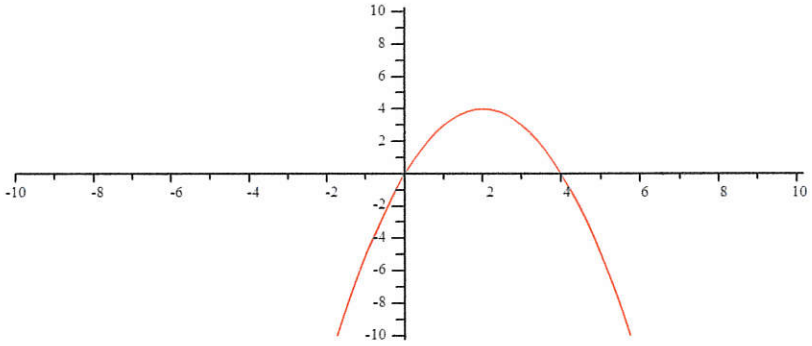
*KEY*Functions and Graphs Extra Practice

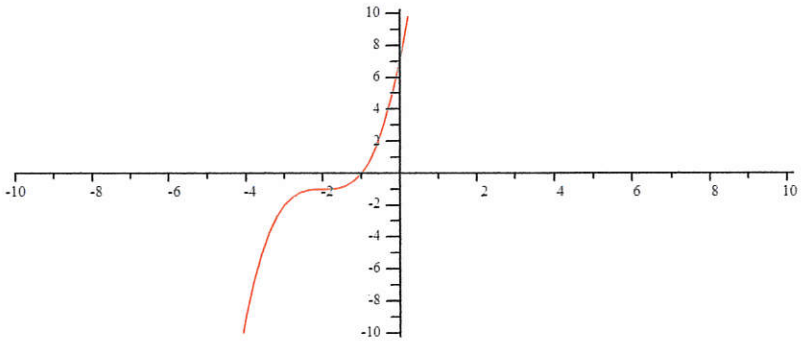
List the horizontal shift, vertical shift, vertex, axis of symmetry, whether it's up, down, fat, skinny, or standard, domain and range and graph it.

1. $y=-(x-2)^2+4$



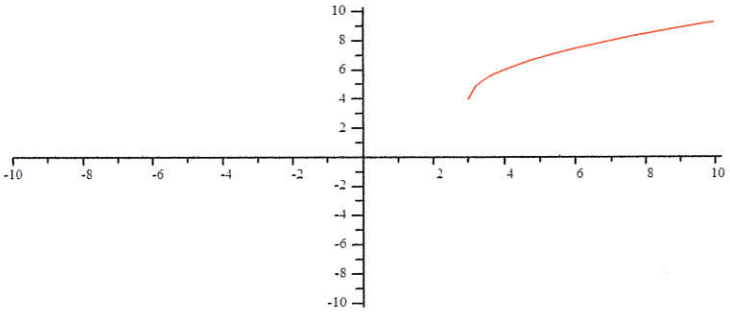
   a. HS → 2
   b. VS ↑ 4
   c. Vertex V(2, 4)
   d. A.S. x = 2
   e. Up or down? down
   f. Fat, skinny, or standard? standard
   g. Domain $(-\infty, \infty)$
   h. Range $(-\infty, 4]$

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



a) HS ← 2
b) VS ↓ 1
c) Vertex None
d) A.S. None
e) Up or down? Up
f) Fat, skinny, or standard? Standard
g) Domain $(-\infty, \infty)$
h) Range $(-\infty, \infty)$

3. $y = 2\sqrt{x-3}+4$



a) HS → 3

b) VS ↑ 4

c) Vertex None

d) A.S. None

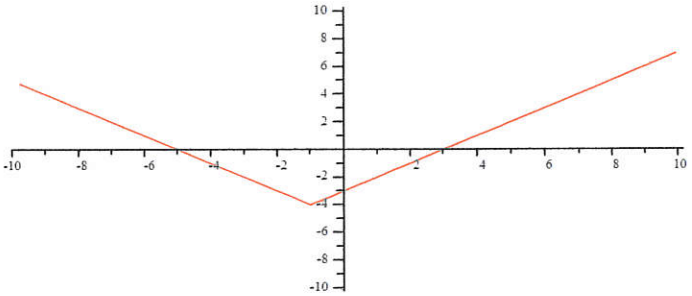
e) Up or down? Up

f) Fat, skinny, or standard? Skinny

g) Domain $[3, \infty)$

h) Range $[0, \infty)$

4. $y = |x+1|-4$



a) HS ← 1

b) VS ↓ 4

c) Vertex V(-1, -4)

d) A.S. x = -1

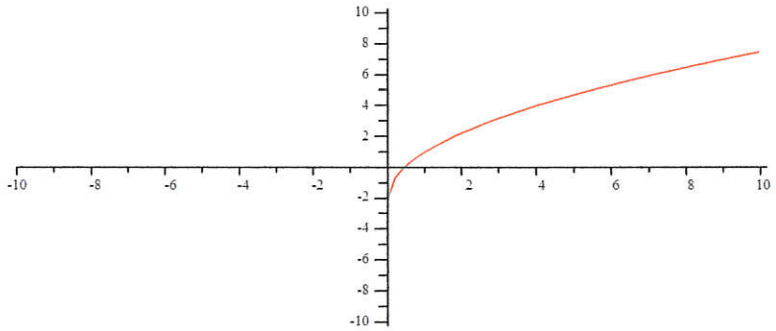
e) Up or down? Up

f) Fat, skinny, or standard? Standard

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

h) Range $[-4, \infty)$

5. $y = 3\sqrt{x} - 2$



a) HS 0

b) VS ↓ 2

c) Vertex None

d) A.S. None

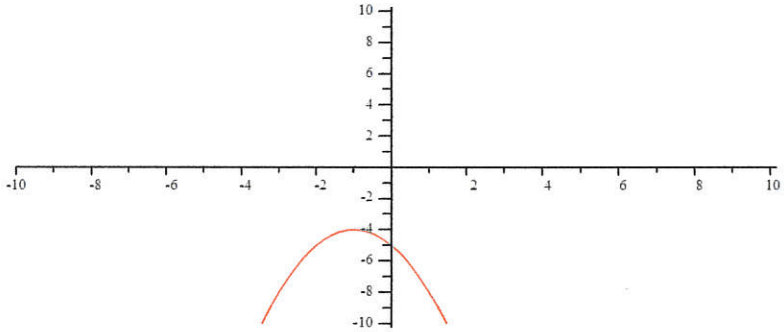
e) Up or down? Up

f) Fat, skinny, or standard? Skinny

g) Domain $[0, \infty)$

h) Range $[-2, \infty)$

6. $y = -(x+1)^2 - 4$



a) HS ← 1

b) VS ↓ 4

c) Vertex V(-1, -4)

d) A.S. x = -1

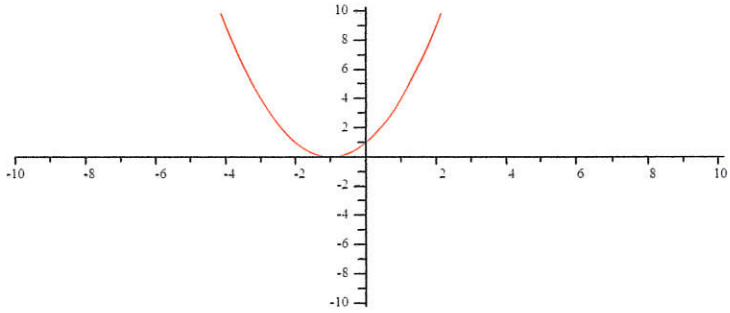
e) Up or down? Down

f) Fat, skinny, or standard? Standard

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

h) Range $(-\infty, -4]$

7. $y=(x+1)^2$



a) HS ← 1

b) VS 0

c) Vertex V(-1, 0)

d) A.S. x = -1

e) Up or down? Up

f) Fat, skinny, or standard? Standard

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

h) Range $[0, \infty)$

Determine whether each function is even, odd, or neither.

8. $f(x) = 5x^3 - x$

Odd

9. $f(x) = |x| + 3$

Even

10. $f(x) = x^2 - 3x + 6$

Neither