

8.4 Modifying Basic Functions

3)

- a) $\{c : c > 1\}$
- b) $\{c : 0 < c < 1\}$
- c) 1

5) It is reflected it over the x -axis.

11)

- a) $y = f(x + 3) - 2$
- b) $y = -f(x + 3)$
- c) $y = -c f(x)$
- d) $y = c f(x) - 2$

13)

- a)
 - 1) Basic absolute value function
 - 2) Basic square root function
 - 3) Basic cubic function
 - 4) Basic quadratic function

b)

- 1) $f(x) = |x - 2|$ ← Basic graph is shifted to the right 2 units
- 2) $f(x) = \sqrt{x + 2}$ ← Basic graph is shifted to the left 2 units
- 3) $f(x) = x^3 - 1$ ← Basic graph is shifted down 1 unit
- 4) $f(x) = (x + 1)^2 + 1$ ← Basic graph is shifted left 1 & up 1 unit

15) (9.5, 52)

17)

- a) Yes
- b) $(\frac{5}{2}, \frac{11}{4})$
- c) $\{x : \frac{5}{2} < x\}$

19) $24b(3a^2 - 2b^2)$