

1. Root
2. Rational
3. Exponential
4. Power
5.
  - (a) Compressed horizontally
  - (b) Shifted 3 units right
  - (c) Shifted 4 units up (Think of  $x^2$  versus  $x^2 + 4$ )
  - (d) Reflected across the  $x$ -axis
  - (e) Reflected across the  $x$ - and  $y$ -axis
  - (f) Stretched vertically
6. Reflected across the  $x$ -axis
7. Shifted 3 units to the right
8. Shifted 2 units up and 3 units to the right
9. The graph of  $f(x) = -(x - 1)^2 + 2$  is the graph of  $f(x) = x^2$  shifted 2 units up, 1 unit to the right and "upside down".
10. The graph of  $f(x) = 2 - \sqrt{x + 1}$  is the graph of  $f(x) = \sqrt{x}$  shifted 2 units up, 1 unit to the left and "upside down".
11. The graph of  $f(x) = 1 - (x - 8)^6$  is the graph of  $f(x) = x^6$  shifted 1 unit up, 8 units to the right and "upside down".
- 12.