

Name: _____

Analyzing Graphs of Functions

Exercise 1: Describe the relation between the graph of the given function and its parent function, then graph it

1) $f(x) = 3x^2 + 7$

2) $f(x) + 1 = x^2$

3) $f(x) - 9 = x^2 - 2$

4) $f(x) = 3(x + 7)^2$

5) $f(x) - 9 = |x|$

6) $f(x) = |x - 11|$

7) $f(x) - 9 = |x - 3|$

8) $f(x) = 4|x - 1|$

9) $f(x) - 1 = x^3$

10) $f(x) = (x - 3)^3$

11) $f(x) = (x - 3)^3$

12) $f(x) = (x + 4)^3 + 2$

Exercise 2: Graph the piecewise function

1) $f(x) = \begin{cases} 2x & , -5 \leq x < 2 \\ 5 & , 2 \leq x \leq 6 \end{cases}$

2) $f(x) = \begin{cases} x + 3 & , -8 \leq x < 1 \\ 10 - 2x & , 1 \leq x \leq 7 \end{cases}$

3) $f(x) = \begin{cases} x + 1 & , -6 \leq x < -2 \\ 5 & , -2 \leq x < 1 \\ -2x + 1 & , x \geq 3 \end{cases}$

4) $f(x) = \begin{cases} 1, & 0 \leq x < 1 \\ 3, & 1 \leq x < 3 \\ 5, & 3 \leq x < 5 \\ 7 & 5 \leq x < 7 \end{cases}$