

Precalculus  
Piecewise Functions

Name \_\_\_\_\_

Graph each of the following piece-wise functions.

$$1. f(x) = \begin{cases} 1 - x^2 & \text{if } x \leq 2 \\ x & \text{if } x > 2 \end{cases}$$

$$2. k(x) = \begin{cases} x^3 & \text{if } x < 0 \\ \frac{1}{x} & \text{if } x > 0 \end{cases}$$

$$3. g(x) = \begin{cases} -x & \text{if } x < 0 \\ x^2 & \text{if } 0 \leq x \leq 1 \\ 1 & \text{if } x > 1 \end{cases}$$

$$4. h(x) = \begin{cases} x^2 & \text{if } x \leq 1 \\ x + 2 & \text{if } 1 < x \leq 4 \end{cases}$$

$$5. g(x) = \begin{cases} x^2 & \text{if } x < 0 \\ x^3 & \text{if } 0 \leq x \leq 1 \\ 2x - 1 & \text{if } x > 1 \end{cases}$$

$$6. g(x) = \begin{cases} 3 - x & \text{if } x \leq 1 \\ 2x & \text{if } x > 1 \end{cases}$$

$$7. f(x) = \begin{cases} x^2 + 1 & \text{if } x < 0 \\ x - 1 & \text{if } x \geq 0 \end{cases}$$

$$8. f(x) = \begin{cases} -x + 4 & \text{if } x \leq -5 \\ x^2 & \text{if } -5 < x < 1 \\ \sqrt{x} & \text{if } x \geq 1 \end{cases}$$

$$9. f(x) = \begin{cases} 1 & \text{if } x < 0 \\ \sqrt{x} & \text{if } x \geq 0 \end{cases}$$

$$10. f(x) = \begin{cases} (x + 4)^2 & \text{if } x \leq -2 \\ 2 & \text{if } -2 < x < 0 \\ -x^2 + 2x & \text{if } x \geq 0 \end{cases}$$