

**Piecewise Functions
Worksheet #1**

Name _____

Evaluate:

1. $f(x) = \begin{cases} 3-x, & x \leq 1 \\ 2x, & x > 1 \end{cases}$

$f(0) = \underline{\hspace{2cm}}$
 $f(1) = \underline{\hspace{2cm}}$
 $f(2.5) = \underline{\hspace{2cm}}$

2. $f(x) = \begin{cases} 1, & x < 0 \\ \sqrt{x}, & x \geq 0 \end{cases}$

$f(-1) = \underline{\hspace{2cm}}$
 $f(0) = \underline{\hspace{2cm}}$
 $f(5) = \underline{\hspace{2cm}}$

3. $f(x) = \begin{cases} \frac{1}{x}, & x < 0 \\ -3x, & x \geq 0 \end{cases}$

$f(-1) = \underline{\hspace{2cm}}$
 $f(0) = \underline{\hspace{2cm}}$
 $f(\pi) = \underline{\hspace{2cm}}$

4. $f(x) = \begin{cases} 4-x^2, & x < 1 \\ \frac{3}{2}x + \frac{3}{2}, & 1 \leq x \leq 3 \\ x+3, & x > 3 \end{cases}$

$f(.5) = \underline{\hspace{2cm}}$
 $f(1) = \underline{\hspace{2cm}}$
 $f(3) = \underline{\hspace{2cm}}$
 $f(4) = \underline{\hspace{2cm}}$

5. $f(x) = \begin{cases} 1, & x < 5 \\ 0, & x \geq 5 \end{cases}$

$f(0) = \underline{\hspace{2cm}}$
 $f(6) = \underline{\hspace{2cm}}$
 $f(5) = \underline{\hspace{2cm}}$

6. $f(x) = \begin{cases} x^2, & x < 0 \\ x^3, & 0 \leq x \leq 1 \\ 2x-1, & x > 1 \end{cases}$

$f(-1) = \underline{\hspace{2cm}}$
 $f(1) = \underline{\hspace{2cm}}$
 $f(0) = \underline{\hspace{2cm}}$
 $f(2.5) = \underline{\hspace{2cm}}$

Sketch each function below without using a graphing calculator. Find the domain and range of each function. Remember, all functions must pass the vertical line test.

7. $f(x) = \begin{cases} x-3, & x \leq 1 \\ 2x, & x > 1 \end{cases}$

$D_f = \underline{\hspace{2cm}}$
 $R_f = \underline{\hspace{2cm}}$

$f(0) = \underline{\hspace{2cm}}$
 $f(1) = \underline{\hspace{2cm}}$
 $f(2) = \underline{\hspace{2cm}}$

