



1) Evaluate the piecewise function,  $g(x)$ , for different input values:

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

$g(7) = \underline{\hspace{2cm}}$      $g(-7) = \underline{\hspace{2cm}}$      $g(0) = \underline{\hspace{2cm}}$      $g(1.73) = \underline{\hspace{2cm}}$

What input value will give an output of 14? Symbolically,  $g(?) = 14$ ?

All three of these pieces are \_\_\_\_\_ (chose one: linear or quadratic)

2) Complete the table for the following piecewise function:

$$f(x) = \begin{cases} 6x + 7 & \text{for } x < 0 \\ 2x^2 - 4 & \text{for } x \geq 0 \end{cases}$$

$x$	-3	-2	-1	0	1	1.5	$\sqrt{3}$	$\sqrt{5}$	3
$f(x)$									

Which piece is quadratic? \_\_\_\_\_

3) Consider the following scenario:

Logan wants to join a readers' club at the public library. If he joins to read 5 books or less, it will cost him a initial fee of \$12 plus \$6 per book (including the first book). If he joins to read more than 5 books, he will get a library card for \$48 for a full year of unlimited books.

If  $x$  = number of books, complete the table to show how much Logan can expect to pay depending on the number of books he plans to read.

$x$	1	2	3	4	5	6	7	8	9	10	11	12
$L(x)$												

Can you write the piecewise equation for  $L(x)$ ?  $L(x) = \{ \underline{\hspace{2cm}} \}$

How many books does Logan need to read in order for a library card to be the better deal?

4) Evaluate the piecewise function,  $p(x)$ , for different input values:

$$p(x) = \begin{cases} 5x + 2 & \text{if } x < 0 \text{ or } x > 2 \\ 2x^2 & \text{if } 0 \leq x < 2 \\ -3x & \text{if } x = 2 \end{cases}$$

$$p(-3) = \underline{\hspace{2cm}} \quad p(1) = \underline{\hspace{2cm}} \quad p(0) = \underline{\hspace{2cm}} \quad p(2) = \underline{\hspace{2cm}} \quad p(7) = \underline{\hspace{2cm}} \quad p\left(\frac{1}{2}\right) = \underline{\hspace{2cm}}$$

5) The Lafayette High School Athletics Department has different ticket packages depending on how many sporting events you plan to attend.

$$\text{The piecewise function } A(x) = \begin{cases} 5.00x, & 0 \leq x < 8 \\ 2.50x + 5, & 8 \leq x < 20 \\ 1.00x + 5, & x \geq 20 \end{cases}$$

How much will it cost someone if they go to 10 games?  $T(10) = \underline{\hspace{2cm}}$

How much will it be if someone goes to just the 6 football games?  $T(6) = \underline{\hspace{2cm}}$

How much will it be if someone goes to 30 games?  $T(\ ) = \underline{\hspace{2cm}}$

If Dr. Kitchens pays \$50 for his ticket package, how many games did he go to?

6) Graph the piecewise function.

First, complete the table of values before you plot the points.

$$f(x) = \begin{cases} \frac{2}{3}x - 4 & x \leq -2 \text{ or } x > 5 \\ 3 - x & -2 < x < 5 \\ -x & x = 5 \end{cases}$$

$x$	-6	-3	-2	-1	0	1	2	3	4	5	6	7	
$f(x)$													

