

Notes 2-6A Special Functions
Algebra II

Name _____
 Period _____

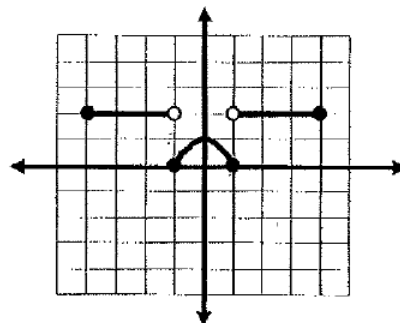
A **piecewise function** is a function that is defined by more than one equation. The rule for a piecewise function is different for different parts, or pieces, of the domain. Ex: ticket prices by age. Postal rates.

Example #1: The graph of a piecewise function is given.

1) Find:

$g(-1) = \underline{\hspace{2cm}}$ $g(1) = \underline{\hspace{2cm}}$

$g(0) = \underline{\hspace{2cm}}$ $g(3) = \underline{\hspace{2cm}}$



2) State the domain and range using interval notation.

D:

R:

Example #2:

Find:

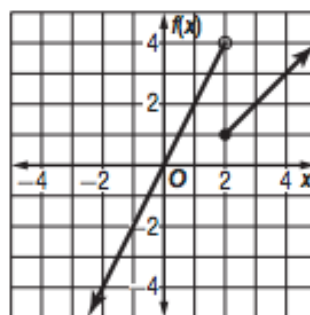
$f(-2) = \underline{\hspace{2cm}}$

$f(3) = \underline{\hspace{2cm}}$

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

D:

R:



A **step function** is an example of a piecewise function that is constant for each interval in its domain.

Example #3

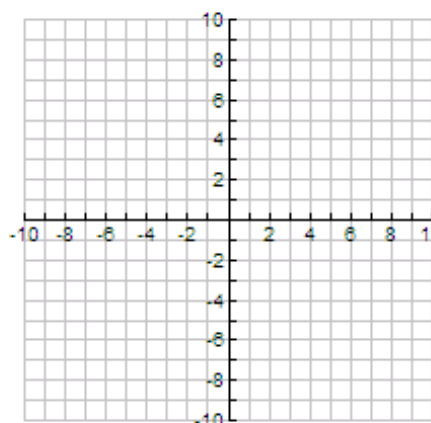
$$f(x) = \begin{cases} 2, & \text{for } x < -3 \\ -4, & \text{for } x > -3 \end{cases}$$

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

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

$f(-3) = \underline{\hspace{2cm}}$

D:



Example #4:

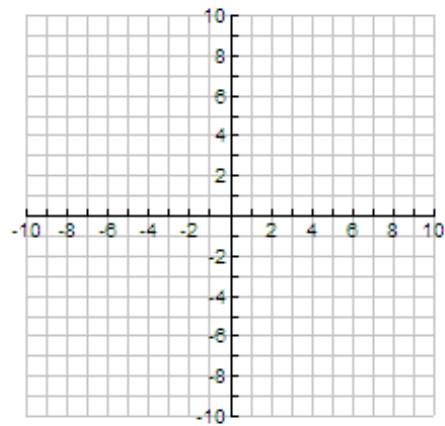
$$\text{Ex: } f(x) = \begin{cases} -6, & \text{for } x \leq 0 \\ 5, & \text{for } x > 0 \end{cases}$$

$f(-1) =$ _____

$f(6) =$ _____

D:

R:



Graph each function. State the domain & range using interval notation.

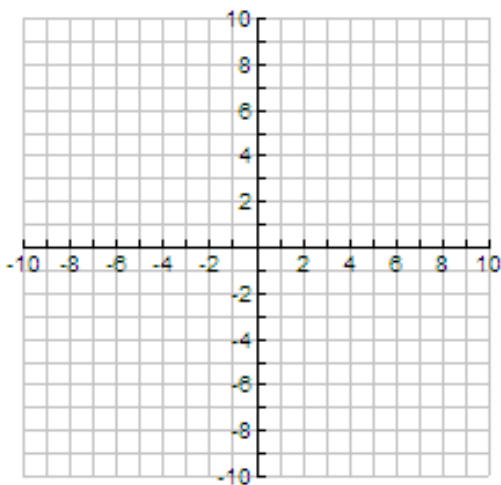
Example #5

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

$f(-4) =$ _____

$f(-3) =$ _____

$f(3) =$ _____



Example #6

$$f(x) = \begin{cases} \frac{3}{4}x + 1 & \text{for } x < 4 \\ \frac{3}{4}x - 2 & \text{for } x \geq 4 \end{cases}$$

$f(-4) =$ _____

$f(8) =$ _____

$f(4) =$ _____

