

Piecewise Functions:

$$f(x) = \begin{cases} 3x - 5, & x > 4 \\ x^2, & x \leq 4 \end{cases}$$

*restrictions*

Evaluate:

a)  $f(7) = 3(7) - 5 = 16$   
 b)  $f(4) = 4^2 = 16$   
 c)  $f(-3) = (-3)^2 = 9$

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

a)  $f(10) = 6 - 2(10) = -14$   
 b)  $f(2) = 3$   
 c)  $f(0) = -2$

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• Graph

$$f(x) = \begin{cases} -x + 2, & x < 2 \\ x + 2, & x \geq 2 \end{cases}$$

$\frac{x}{2} \mid \frac{y}{1}$

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

$\frac{x}{1} \mid \frac{y}{1}$

$\frac{x}{2} \mid \frac{y}{4}$

D:  $(-\infty, \infty)$   
 R:  $(-\infty, 1) \cup [2, \infty)$

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