5-3 Reteach to Build Understanding

Step Functions

1. These graphs show examples of different piecewise-defined functions. Draw a line from each function to the graph it describes.

Ceiling Function

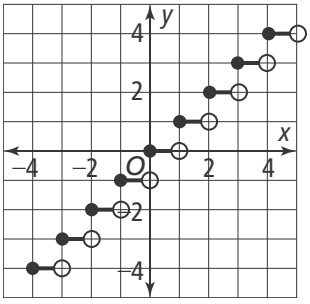
$f(x) = \lceil x \rceil$

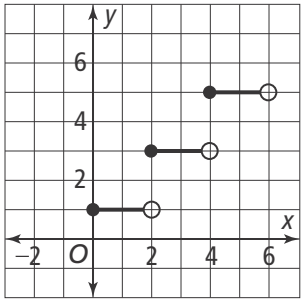
Ceiling Function

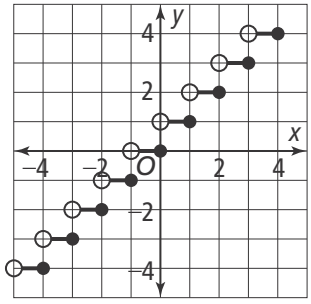
$f(x) = \lfloor x \rfloor$

Step Function

$f(x) = \{1, 0 \leq x < 2$
$\{3, 2 \leq x < 4$
$\{5, 4 \leq x < 6$







2. Brenda made two incorrect statements about the function $f(x) = \lfloor x \rfloor$. Put an X next to any incorrect statements. Correct her errors.

a. The function $f(x)$ is a piecewise-defined function.

b. The function $f(x)$ is a step function.

c. In this function, the input is rounded up to the nearest integer to produce the output.

d. The value of $f(2.6)$ is 2.

e. The domain of $f(x)$ is $x \geq 0$.

3. Complete the statements about a certain step function.

The function y = floor (x, 10) takes any number and rounds it to the nearest multiple of 10 that is less than or equal to the number.

Each step of the function is _____ units wide, with a(n) _____ circle on the left and a(n) _____ circle on the right, and the rise for each step is _____ units.