

2.6 Part 1 PIECEWISE FUNCTIONS

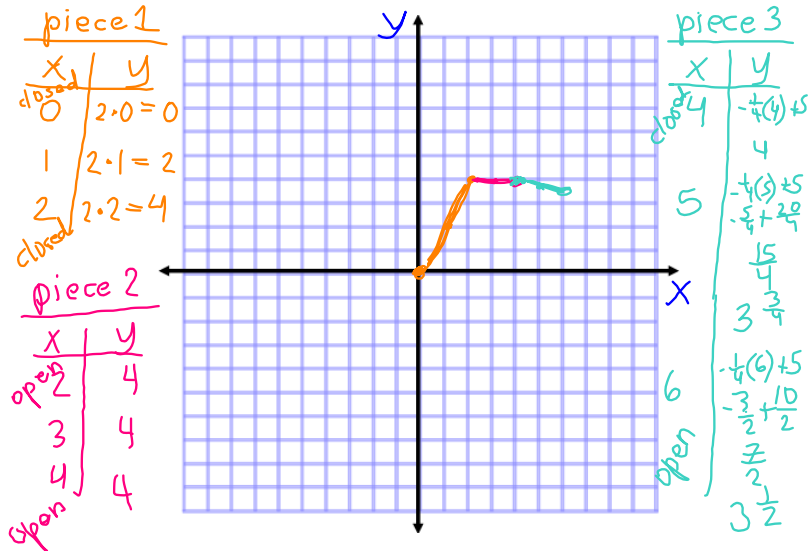
They consist of different function rules for different parts of the domain.

EXAMPLES

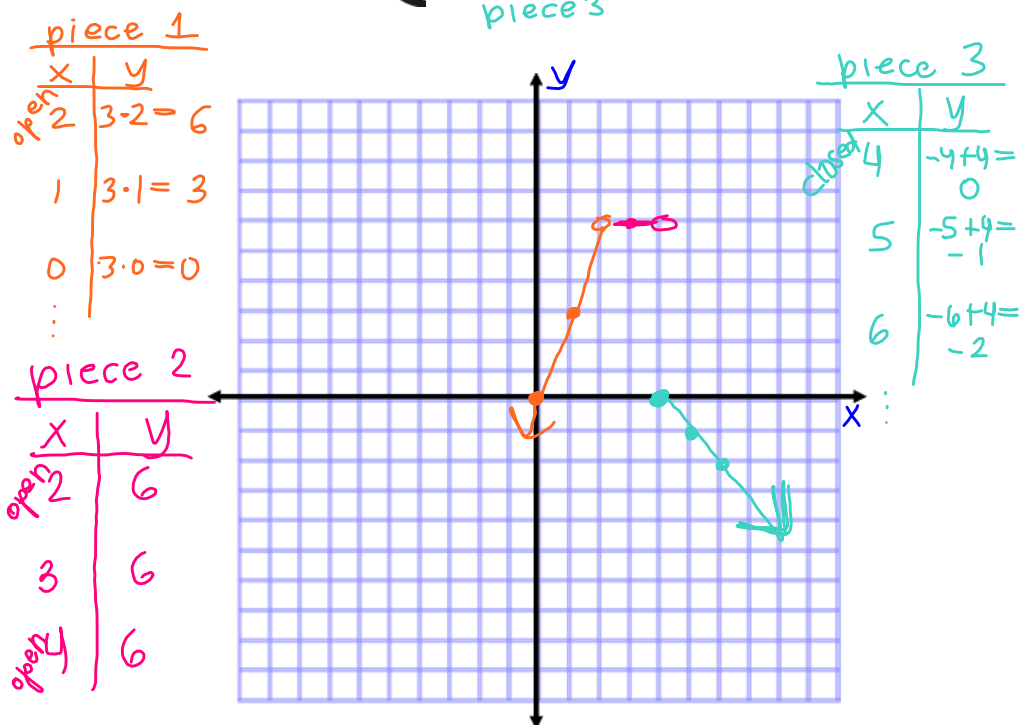
1. Graph  $f(x) = \begin{cases} 2x & \text{piece 1 if } 0 \leq x \leq 2 \\ 4 & \text{piece 2 if } 2 < x < 4 \\ -\frac{1}{4}x + 5 & \text{piece 3 if } 4 \leq x < 6 \end{cases}$

↑  
name

domain



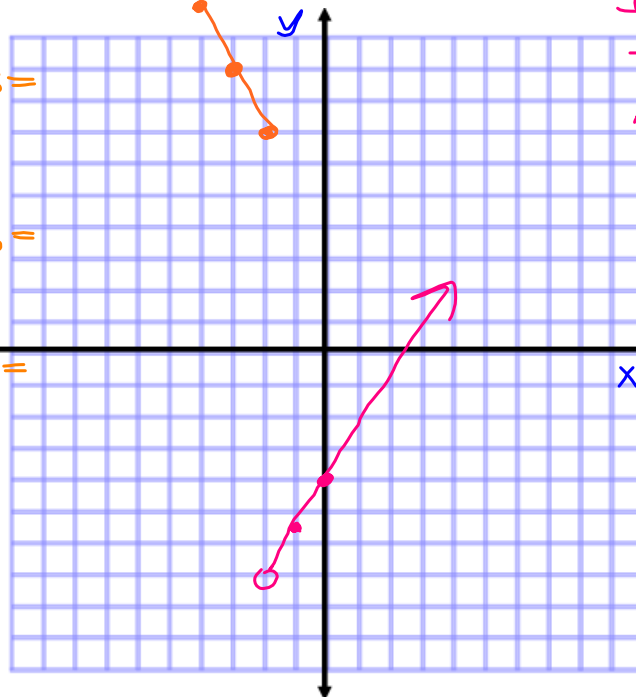
2. Graph  $g(x) = \begin{cases} 3x & \text{piece 1 if } x < 2 \\ 6 & \text{piece 2 if } 2 < x < 4 \\ -x + 4 & \text{piece 3 if } x \geq 4 \end{cases}$



3. Graph  $h(x) = \begin{cases} -2x + 3 & \text{if } x \leq -2 \\ \frac{3}{2}x - 4 & \text{if } x > -2 \end{cases}$

piece 1

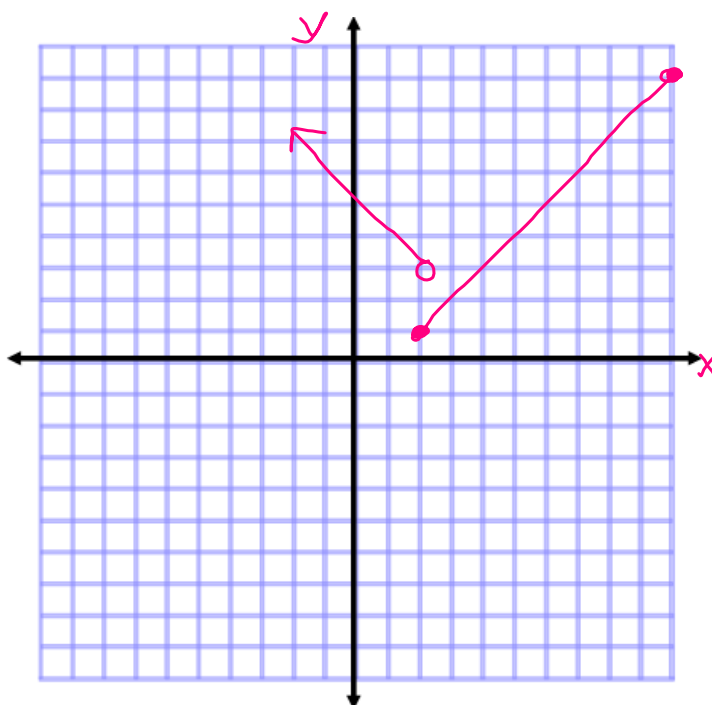
x	y
-2	$-2(-2) + 3 = 7$
-3	$-2(-3) + 3 = 9$
-4	$-2(-4) + 3 = 11$
⋮	



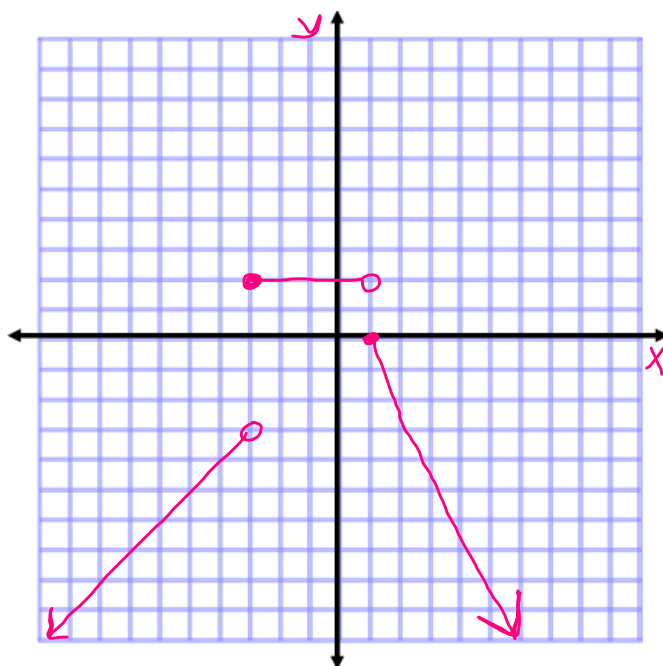
piece 2

x	y
-2	$\frac{3}{2}(-2) - 4 = -3 - 4 = -7$
-1	$\frac{3}{2}(-1) - 4 = -\frac{3}{2} - 4 = -\frac{11}{2} = -5\frac{1}{2}$
0	$\frac{3}{2}(0) - 4 = 0 - 4 = -4$

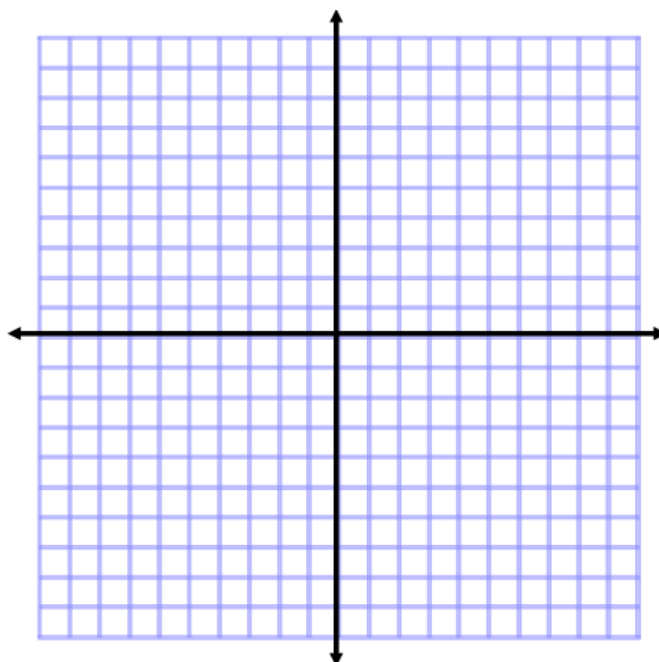
4. Graph  $k(x) = \begin{cases} 5 - x & \text{if } x < 2 \\ x - 1 & \text{if } 2 \leq x \leq 10 \end{cases}$



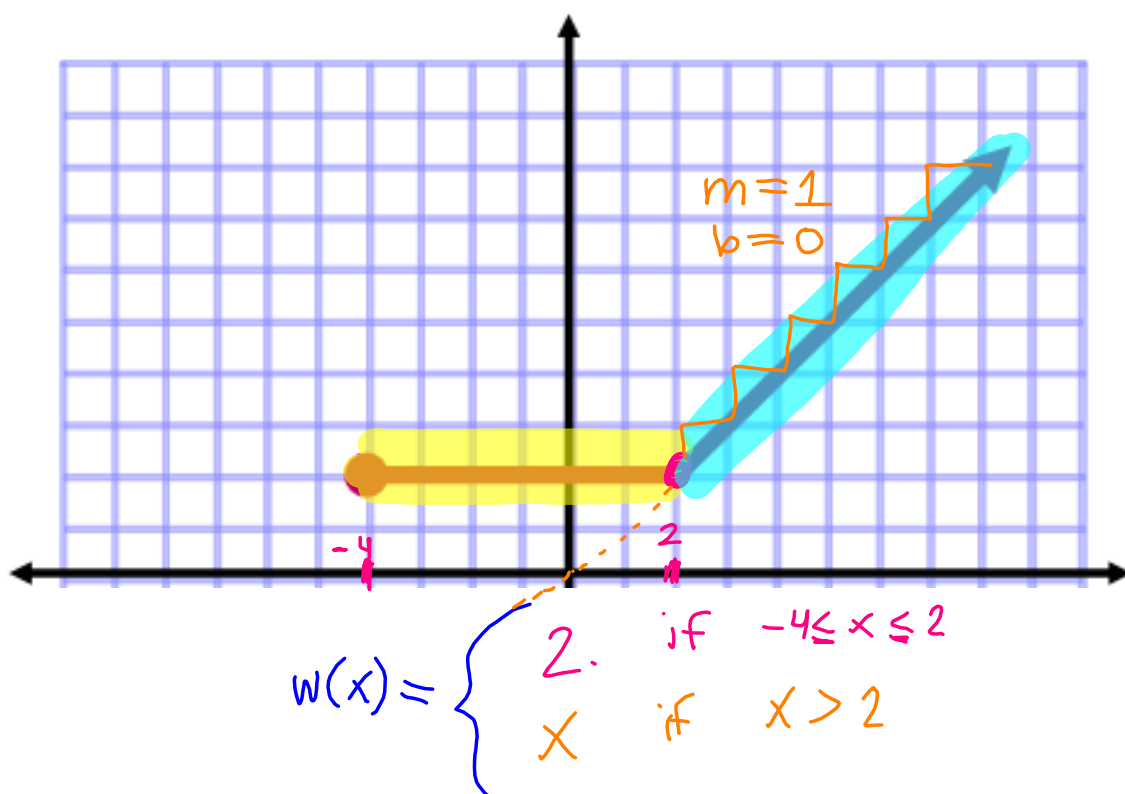
$$5. \text{ Graph } f(x) = \begin{cases} x & \text{if } x < -3 \\ 2 & \text{if } -3 \leq x < 1 \\ -2x + 2 & \text{if } x \geq 1 \end{cases}$$



$$6. \text{ Graph } g(x) = \begin{cases} -1 & \text{if } x \leq -2 \\ x & \text{if } -2 < x < 2 \\ -x + 1 & \text{if } x \geq 2 \end{cases}$$



7. Write the piecewise function represented by the graph.



8. Write the piecewise function represented by the graph.

