Introduction to Piecewise Functions

Objective: To write a rule for piecewise functions
Check skills you'll need

Write the equation for the following graphs
Piecewise functions are graphs of two or more functions that are pieced together.
Writing rules for piecewise functions

Step 1
Step 2
Step 3
Step 4
Step 1: Identify the various pieces

Step 2

Step 3

Step 4
Writing rules for piecewise functions

Step 1: Identify the various pieces

Step 2: Write the equation for each piece

Step 3

Step 4

f(x) = x + 8  

f(x) = 3  

f(x) = 2x - 1
Step 1: Identify the various pieces

Step 2: Write the equation for each piece

Step 3: Find the restriction (starting and ending point) for each piece

Step 4

\[ f(x) = x + 8 \]
\[ f(x) = 3 \]
\[ f(x) = 2x - 1 \]
Step 1: Identify the various pieces
Step 2: Write the equation for each piece
Step 3: Find the restriction (starting and ending point) for each piece
Step 4: Write the rule for the entire piecewise function

Writing rules for piecewise functions

\[ f(x) = x + 8 \]
\[ f(x) = 3 \]
\[ f(x) = 2x - 1 \]
Writing rules for piecewise functions

\[ f(x) = \begin{cases} 
  x + 8, & \text{if } x < -5 \\
  3, & \text{if } -5 \leq x \leq 2 \\
  2x - 1, & \text{if } x > 2 
\end{cases} \]
Writing rules for piecewise functions
Writing rules for piecewise functions

\[ f(x) = \begin{cases} 
5, & \text{if } x < -4 \\
x + 3, & \text{if } -2 < x \leq 3 \\
-2, & \text{if } x > 3 
\end{cases} \]
Homework

Writing rules worksheet