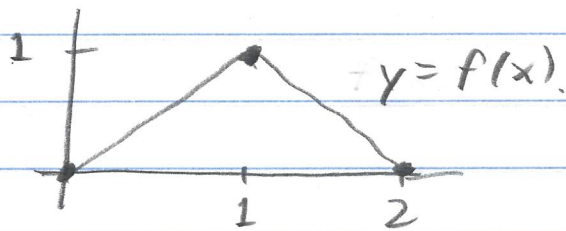


1.1 #29(a) Find a formula for $f(x)$:



Solution

Let us define f piecewise!
The piece on $[0, 1)$ is a line of slope $m_1 = 1$ and containing the point $(0, 0)$. So the line is $y = x$. That is,
 $f(x) = x$ for $x \in [0, 1)$.

Next, the piece on $[1, 2]$ is a line of slope $m_2 = -1$ and containing the point $(2, 0)$. So, by the point-slope formula for a line, $y - y_1 = m(x - x_1)$ we have $y - 0 = (-1)(x - 2)$ or
 $y = -x + 2$. That is, $f(x) = -x + 2$ for $x \in [1, 2]$.
So,

$$f(x) = \begin{cases} x & \text{for } x \in [0, 1) \\ -x + 2 & \text{for } x \in [1, 2]. \end{cases}$$