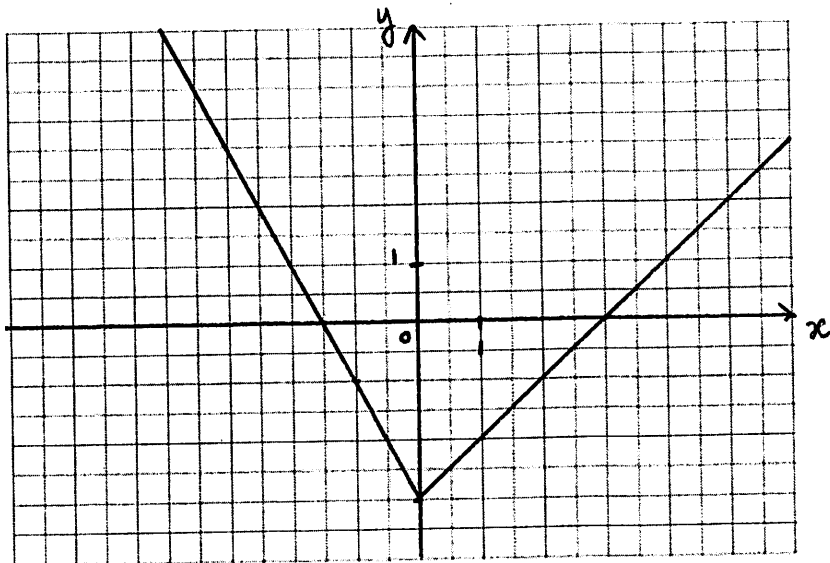


## Thinking Classroom : Piecewise Functions

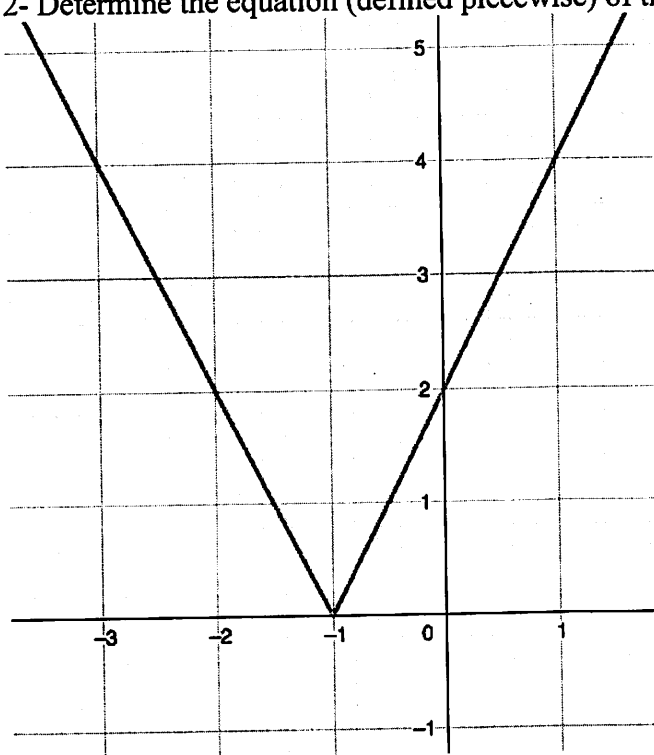
1- Graph the following function:

$$y = \begin{cases} -2x - 3 & \text{if } x < 0 \\ x - 3 & \text{if } x \geq 0 \end{cases}$$



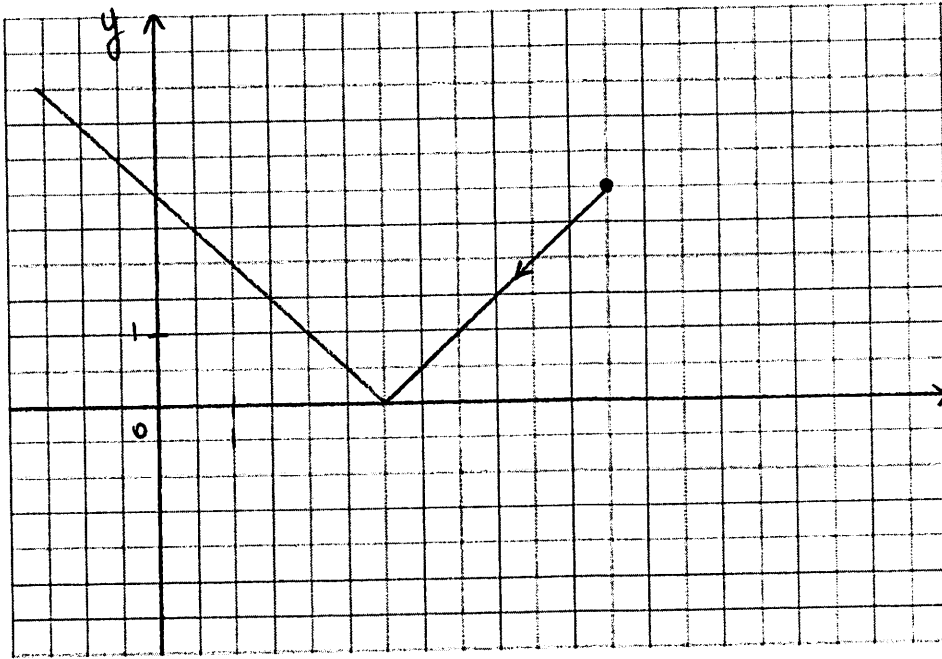
We say that this function is defined **piecewise**.

2- Determine the equation (defined piecewise) of the following function:



$$y = |2x + 2|$$

- 3- Imagine that a pool ball that is at point  $(6,3)$  follows a trajectory described by  $y = x - 3$  and then bounces on the  $x$ -axis. Which equation could describe the full trajectory?



$$y = \begin{cases} x - 3 & \text{if } 3 \leq x \leq 6 \\ -x + 3 & \text{if } x < 3 \end{cases}$$