

EXAMPLE: Sketch the graph of the function.

$$f(x) = \begin{cases} x^2 & \text{if } x \leq 1 \\ 2x + 1 & \text{if } x > 1 \end{cases}$$

Solution: If  $x \leq 1$ , then  $f(x) = x^2$ , so the part of the graph to the left of  $x = 1$  coincides with the graph of  $y = x^2$ . If  $x > 1$ , then  $f(x) = 2x + 1$ , so the part of the graph to the right of  $x = 1$  coincides with the line  $y = 2x + 1$ .

