Graphs – Q2 [Practice/Y2/E] (25/5/21)

Sketch $y = |x - 2| + 1$

Sketch $y = |x - 2| + 1$

Solution

Method 1

Case (i) $x - 2 \geq 0$

$y = |x - 2| + 1 = (x - 2) + 1 = x - 1$ for $x \geq 2$

Case (ii) $x - 2 < 0$

$y = |x - 2| + 1 = -(x - 2) + 1 = 3 - x$ for $x < 2$

(The two lines will meet when $x = 2, y = 1$)

Method 2

Informally, $y = |x - 2| + 1$ will behave similarly to $y = (x - 2)^2 + 1$, and will have a minimum at (2,1)