## **PIECEWISE FUNCTIONS:**

A piecewise function is a function that is made up of a combination of two or more other functions where each sub-function is defined on a certain interval.

$$f(x) = \begin{cases} x+3 & \text{if } x < -2 \\ -|x|+5 & \text{if } -2 \le x < 3 \\ x-4 & \text{if } x \ge 3 \end{cases}$$



2.1 WORKED EXAMPLE	2.2 WORKED EXAMPLE
a) Sketch $f(x) = \begin{cases} -x+2 & \text{if } x < 0\\ 3x-3 & \text{if } x > 0 \end{cases}$	A function is defined as follows: $f(x) = \begin{cases} 16 - x^2 & \text{for } x < 0 \\ px + z & \text{for } 0 \le x \le 2 \end{cases}$
b) Evaluate $f(x)$ when:	$(x-2)^2$ for $x > 2$
i. $x = -1$	a) Draw the function
ii. $x = 5$	b) Find the values of $p$ and $z$ which would $f(x)$ be
iii. $x = 3$	continuous.
c) Is this a continuous or discontinuous function? Why?	