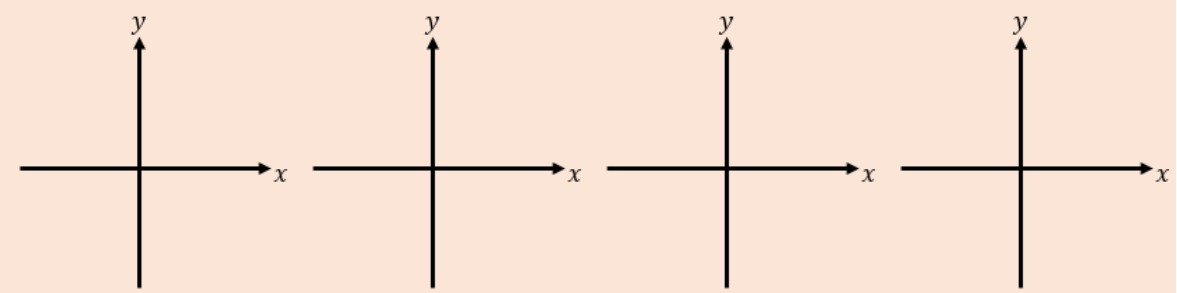
2G Solving Modulus Equations

1. Given the function:

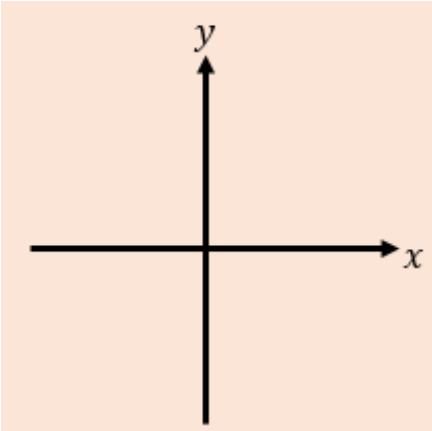
$$t(x) = 3|x - 1| - 2,\ x \in \mathbb{R}$$

a) Sketch the graph of the function



b) State the range of the function

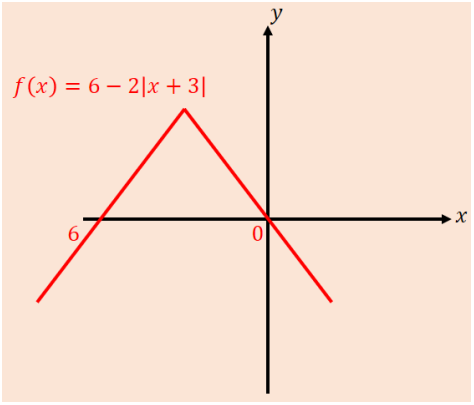
c) Solve the equation $t(x) = \frac{1}{2}x + 3$



2. The function f is defined by:

$$f: x \to 6 - 2|x + 3|$$

A sketch of the graph is shown.



a) State the range of f

b) Explain why f^{-1} does not exist

c) Solve the inequality $f(x) > 5$