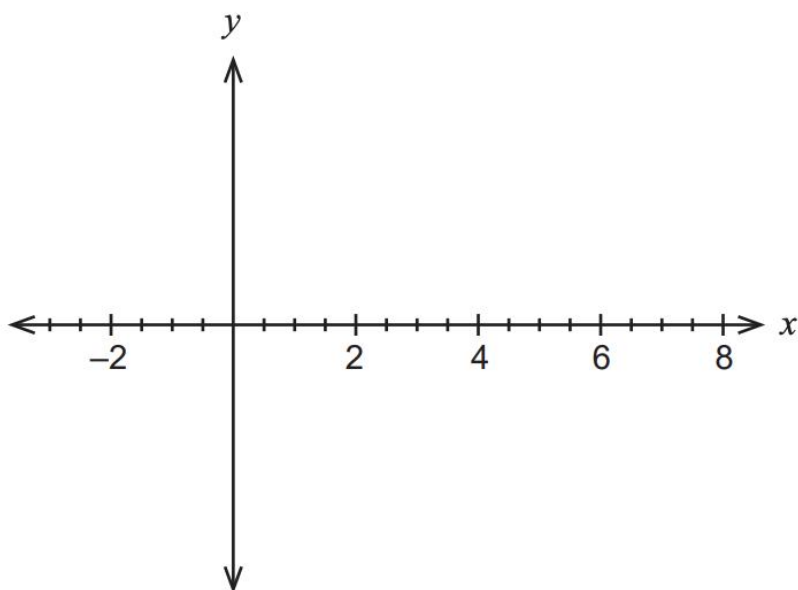**Question 8** **(8 marks)**

Consider the function $f(x) = \log_a (x-1)$ where $a > 1$.

(a)   On the axes below, sketch the graph of $f(x)$, labelling important features. (3 marks)

(b)   Determine the value of m if $f(m) = 1$. (2 marks)

(c)   Determine the coordinates of the x – intercept of $f(x + b) + c$, where b and c are positive real constants. (3 marks)