

10. (a) Sketch the graph with equation

$$y = |2x - 9| + 3$$

stating the coordinates of the vertex and any points where the graph crosses the coordinate axes.

(3)

(b) Solve the equation

$$3x + 1 = |2x - 9| + 3$$

(2)

A straight line l has equation $y = kx + 1$, where k is a constant.

Given that l does not meet or intersect the graph with equation $y = |2x - 9| + 3$

(c) find the range of possible values of k .

(3)