

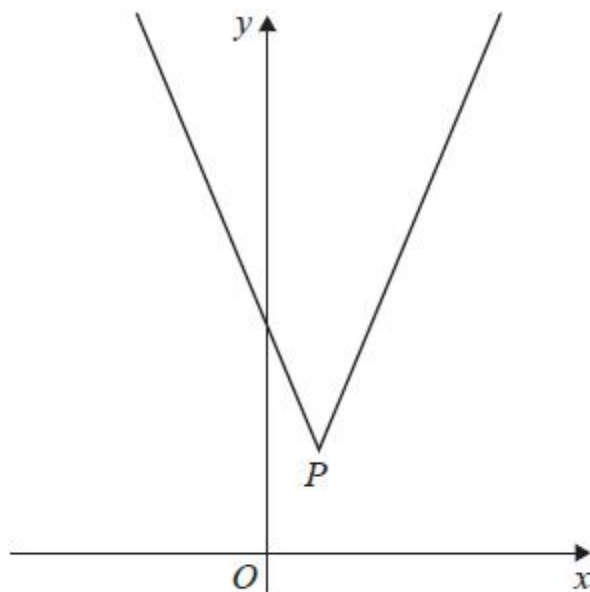
**Topic: Modulus Function****Figure 1**

Figure 1 shows a sketch of the graph with equation

$$y = 3|x - 2| + 5$$

The vertex of the graph is at the point  $P$ , shown in Figure 1.

(a) Find the coordinates of  $P$ .

(2)

(b) Solve the equation

$$16 - 4x = 3|x - 2| + 5$$

(2)

A line  $l$  has equation  $y = kx + 4$  where  $k$  is a constant.

Given that  $l$  intersects  $y = 3|x - 2| + 5$  at 2 distinct points,

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

(2)

**(Total for question = 6 marks)**