

Problem solving with lines and circles

A LEVEL LINKS

Scheme of work: 2a. Straight-line graphs, parallel/perpendicular, length and area problems

Practice question

1

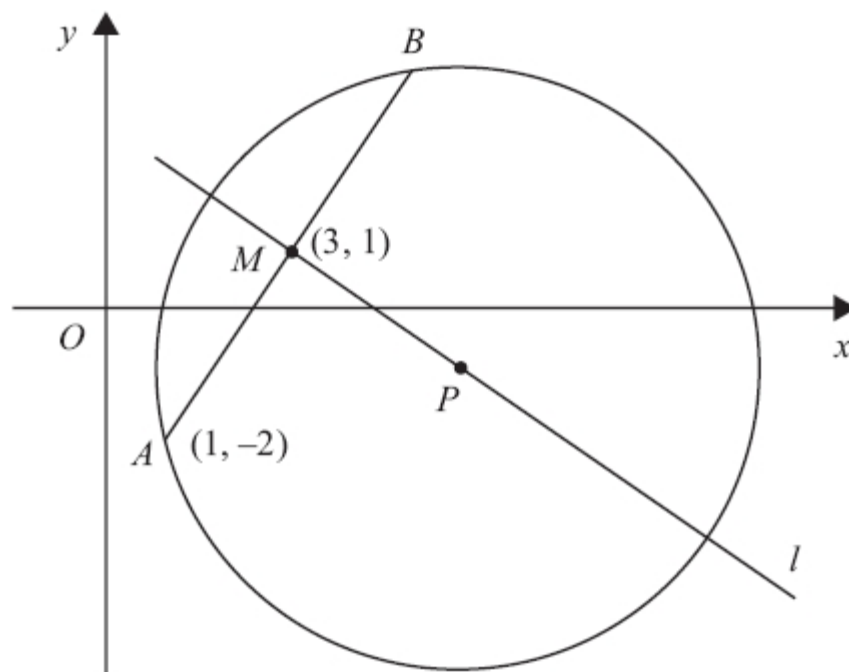


Figure 3

The points A and B lie on a circle with centre P , as shown in Figure 3. The point A has coordinates $(1, -2)$ and the mid-point M of AB has coordinates $(3, 1)$. The line l passes through the points M and P .

(a) Find an equation for l .

Given that the x -coordinate of P is 6,

(b) use your answer to part (a) to show that the y -coordinate of P is -1 ,

Answers

- 1 **a**
- $$3y = -2x + 9$$
- $$y = -\frac{2}{3}x + 3$$
- b** $x = 6 : 3y = -12 + 9 = -3 \quad y = -1$