

4.

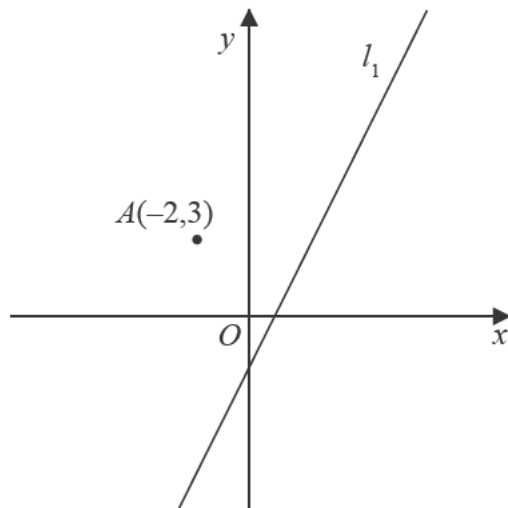


Figure 2

Figure 2 is a sketch showing the line l_1 with equation $y = 2x - 1$ and the point A with coordinates $(-2, 3)$.

The line l_2 passes through A and is perpendicular to l_1

- (a) Find the equation of l_2 writing your answer in the form $y = mx + c$, where m and c are constants to be found.

(3)

The point B and the point C lie on l_1 such that ABC is an isosceles triangle with $AB = AC = 2\sqrt{13}$

- (b) Show that the x coordinates of points B and C satisfy the equation

$$5x^2 - 12x - 32 = 0$$

(4)

Given that B lies in the 3rd quadrant

- (c) find, using algebra and showing your working, the coordinates of B .

(4)