

16th September



Corbettmaths

Solve

$$y^2 \leq 9$$

$$\underline{-3 \leq y \leq 3}$$

A curve has gradient function

$$\frac{dy}{dx} = 4x^2 - 3x - 7$$

Work out the gradient of the curve when $x = -1$

$$\frac{dy}{dx} = 4 + 3 - 7 = \underline{0}$$

The curve $y = x^2 - 8x + 11$ and the line $y = 21$ intersect at the points A and B.

Find the coordinates of A and B.

$$x^2 - 8x + 11 = 21$$

$$x^2 - 8x - 10 = 0$$

$$(x - 4)^2 - 26 = 0$$

$$x - 4 = \pm\sqrt{26}$$

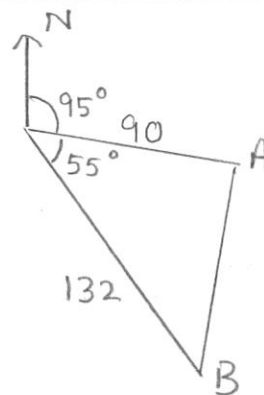
$$x = 4 \pm\sqrt{26}$$

$$\underline{A, B (4 - \sqrt{26}, 21) \& (4 + \sqrt{26}, 21)}$$

Two ships, A and B, leave a port at midday.

Ship A travelled on a bearing of 095° at a speed of 30km/hShip B travelled on a bearing of 150° at a speed of 44km/h

How far apart are ships A and B at 15:00?



$$AB^2 = 90^2 + 132^2 - 2 \times 90 \times 132 \cos 55^\circ$$

$$AB^2 = 11895.8$$

$$\underline{AB = 109.1 \text{ km}}$$