

5th March



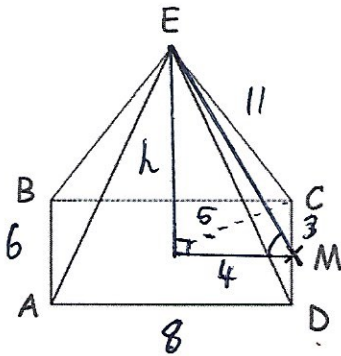
Corbettmaths

A circle, centre $(-6, 4)$ has circumference 14π
 $d = 14$ $r = 7$

Work out the equation of the circle.

$$(x + 6)^2 + (y - 4)^2 = 49$$

Shown below is a rectangular based pyramid.
 The apex E is directly over the centre of the base of the pyramid.



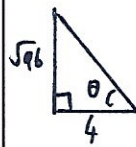
AD = 8cm CD = 6cm
 CE = 11cm

Work out the angle between the plane CDE and plane ABCD

$$h^2 + 5^2 = 11^2$$

$$h^2 = 96$$

$$h = \sqrt{96}$$



$$\tan \theta = \frac{\sqrt{96}}{4}$$

$$\theta = 67.8^\circ$$

A curve has equation $y = x^3 - 3x + 5$

Find the coordinates of the two stationary points and determine their nature.

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

$$\frac{dy}{dx} = 0 \text{ when stationary}$$

$$3x^2 - 3 = 0$$

$$x^2 - 1 = 0$$

$$x = \pm 1$$

$$\frac{d^2y}{dx^2} = 6x$$

$$(1, 3)$$

As $\frac{d^2y}{dx^2} = 6$ (+ve) Minimum.

$$(-1, 7)$$

As $\frac{d^2y}{dx^2} = -6$ (-ve) Maximum.