

24th February



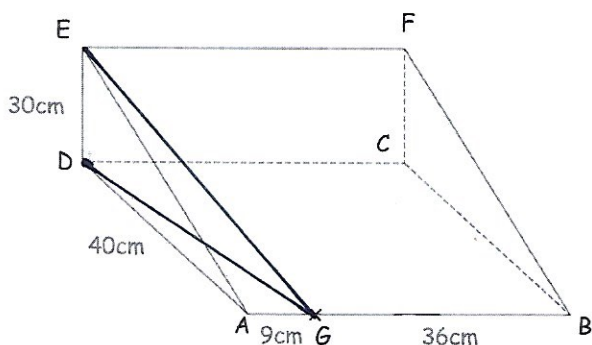
Corbettmaths

Factorise fully

$$75 - 48x^4$$

$$3(25 - 16x^4)$$

$$3(5 - 4x^2)(5 + 4x^2)$$

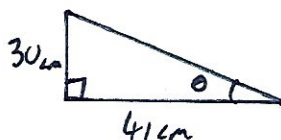


$$DG^2 = 9^2 + 40^2$$

$$= 1681$$

$$DG = 41\text{cm}$$

Calculate the size of the angle between planes ABFE and the line DG



$$\tan \theta = \frac{30}{41}$$

$$\theta = 36.19^\circ$$

A curve has equation

$$y = 4x^2 + 2x - 3$$

A normal to the curve is drawn at the point A.

The normal is parallel to the line with equation $x - 6y = 2$

$$6y = x - 2$$

$$y = \frac{1}{6}x - \frac{1}{3}$$

Find the equation of the normal at the point A.

Give your answer in the form

$$y = mx + c$$

$$y = \frac{1}{6}x - \frac{5}{6}$$

$$\text{At } A, \frac{dy}{dx} = -6$$

$$\frac{dy}{dx} = 8x + 2$$

$$8x + 2 = -6$$

$$8x = -8$$

$$x = -1$$

$$y = -1$$

$$A(-1, -1)$$

$$y = \frac{1}{6}x + c$$

$$-1 = -\frac{1}{6} + c$$

$$c = \frac{5}{6}$$