

6th April

## Higher 5-a-day



Corbettmaths

$y$  is directly proportional to the cube root of  $x$ .

When  $y = 100$ ,  $x = 125$ .

Find  $y$  when  $x = 27$

$$y \propto \sqrt[3]{x}$$

$$y = k \times \sqrt[3]{x}$$

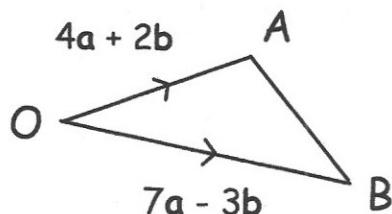
$$100 = k \times \sqrt[3]{125}$$

$$100 = k \times 5$$

$$k = 20$$

$$y = 20 \times \sqrt[3]{x}$$

$$y = 20 \times \sqrt[3]{27}$$

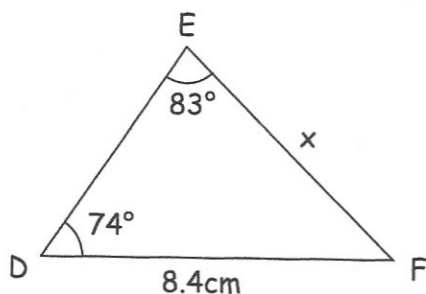


Write down the vector  $\overrightarrow{AB}$  in terms of  $a$  and  $b$

$$\overrightarrow{AO} + \overrightarrow{OB}$$

$$= -4a - 2b + 7a - 3b$$

$$= 3a - 5b$$



Calculate the length of  $EF$

$$\frac{x}{\sin 74} = \frac{8.4}{\sin 83}$$

$$x = 8.135 \text{ cm}$$

A straight line,  $L$ , is perpendicular to the line with equation  $y = 5x + 3$

$L$  passes through the point  $(7, 3)$

Find an equation for the straight line  $L$ .

$$y = -\frac{1}{5}x + c$$

$$3 = -1.4 + c$$

$$c = 4.4$$

$$y = -\frac{1}{5}x + \frac{22}{5}$$

Find the exact value of  $\sin(45^\circ) + \cos(30^\circ)$

$$\frac{\sqrt{2}}{2} + \frac{\sqrt{3}}{2} = \frac{\sqrt{2} + \sqrt{3}}{2}$$