

30th July



Corbettmaths

$$x^{-4} = z^9 \times y^{-1}$$

Write  $y$  in terms of  $x$  and  $z$ 

$$\frac{1}{x^4} = \frac{z^9}{y}$$

$$\Rightarrow \underline{y = x^4 z^9}$$

The longest side of a right angle triangle is  $\sqrt{53}$ cm

One of the shorter sides has a length of  $2\sqrt{2}$ cm

What is the perimeter of the triangle?

$$53 = 8 + b^2$$

$$b^2 = 45$$

$$b = 3\sqrt{5}$$

$$\underline{P = 2\sqrt{2} + 3\sqrt{5} + \sqrt{53} \quad (16.82\text{cm})}$$

A curve has equation  $y = x^2(5 - x)$ Work out the equation of the tangent to the curve at the point  $(5, 0)$ 

$$y = 5x^2 - x^3$$

$$\frac{dy}{dx} = 10x - 3x^2 = -25 \text{ when } x = 5$$

Tgt is  $y = -25(x - 5)$

$$\underline{y = -25x + 125}$$

Solve

$$3\sin^2 x + 2\sin x - 1 = 0$$

for  $0^\circ \leq x \leq 360^\circ$ 

$$(3\sin x - 1)(\sin x + 1) = 0$$

$$\sin x = \frac{1}{3}, \sin x = -1$$

$$\underline{x = 19.5^\circ, 160.5^\circ, 270^\circ}$$