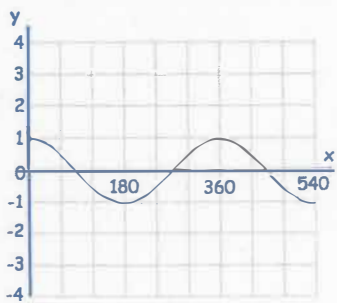


22nd April



Corbettmaths



Write down the equation of the graph shown

$$y = \cos x$$

The width of a rectangle is equal to the length of each side of a square. The length of the rectangle is 6cm less than 4 times its width.

The area of the square is 504cm² less than the area of the rectangle

Find the perimeter of the rectangle.

$$\begin{aligned}
 & \begin{array}{c} x \\ \square \\ x \end{array} \quad \begin{array}{c} 4x-6 \\ \square \\ 4x-6 \end{array} \\
 & x(4x-6) - x^2 = 504 \\
 & 4x^2 - 6x - x^2 - 504 = 0 \\
 & 3x^2 - 6x - 504 = 0 \\
 & x^2 - 2x - 168 = 0 \quad x = 14 \text{ or } x = -12
 \end{aligned}$$

14 + 14 + 50 + 50
128 cm

Write

$$\frac{6}{\frac{1}{\sqrt{2}} + \sqrt{2}} \quad \frac{6}{\frac{\sqrt{2}}{2} + \sqrt{2}}$$

in the form $a\sqrt{2}$, where a is an integer

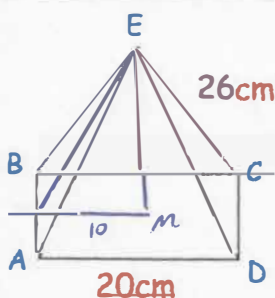
$$\begin{aligned}
 & \frac{\sqrt{2}}{2} + \sqrt{2} \\
 & \frac{\sqrt{2}}{2} + \frac{2\sqrt{2}}{2} = \frac{3\sqrt{2}}{2} \\
 & 6 \div \frac{3\sqrt{2}}{2} \\
 & 6 \times \frac{2}{3\sqrt{2}} = \frac{12}{3\sqrt{2}} = \frac{4}{\sqrt{2}} = \frac{4\sqrt{2}}{2}
 \end{aligned}$$

2√2

Find the value of

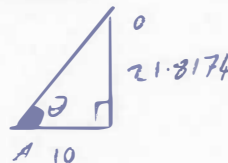
$$\left(\frac{125}{216}\right)^{-\frac{4}{3}} \quad \left(\frac{216}{125}\right)^{\frac{4}{3}} \quad \left(\frac{6}{5}\right)^4$$

$$\frac{1296}{625}$$



$$\begin{aligned}
 AE^2 &= 20^2 + 20^2 \\
 &= 800 \\
 AC &= 20\sqrt{2} \\
 AM &= 10\sqrt{2} \\
 ME^2 &= 26^2 - (10\sqrt{2})^2 \\
 &= 21.817
 \end{aligned}$$

Shown is a square based pyramid. Find the angle between the face ABE and the base ABCD.



$$\begin{aligned}
 \tan \theta &= \frac{21.8174}{10} \\
 \theta &= \tan^{-1}\left(\frac{21.8174}{10}\right) \\
 &= 65.376^\circ
 \end{aligned}$$