Name: _____ 5-a-day Higher Plus

28th March

Corbettmaths

Write 16 in the form 8^n

$8^{\frac{4}{3}}$

Rationalise the denominator

$$\frac{\sqrt{3}}{1+\sqrt{6}} \quad \times\left(1-\sqrt{6}\right) \quad \times\left(1-\sqrt{6}\right)$$

$$\frac{\sqrt{3}-\sqrt{18}}{1-6} = \frac{\sqrt{18}-\sqrt{3}}{6-1} = \frac{3\sqrt{2}-\sqrt{3}}{5}$$

The equation of a circle C, with centre O, is $x^2 + y^2 = 225$

$r = 15$

Write down 5 coordinates of points that lie on C.

(0, 15) (0, -15)
(-15, 0) (15, 0)
(9, 12) (-9, -12)
(9, -12) (12, 9)

The speed limit on a road is 50km/h

It took Sam 60 seconds, correct to the nearest 10 seconds, to drive along a road that is 780m long, correct to 2 significant figures.

Could Sam have broken the speed limit?

Max Speed = $\frac{\text{Max distance}}{\text{min time}}$

$= \frac{785}{55} = 14.27\text{m/s}$

51.381km/h

yes

The area of an equilateral triangle is 200cm²

Find the length of each side. Give your answer to 2 decimal places.

$\frac{1}{2} x^2 \sin 60 = 200$

$x^2 \sin 60 = 400$

$x^2 = 461.88...$

$x = 21.49\text{cm}$