

23rd July



Corbettmaths

Solve

$$25^{3-9x} = \frac{1}{125^{2x-7}}$$

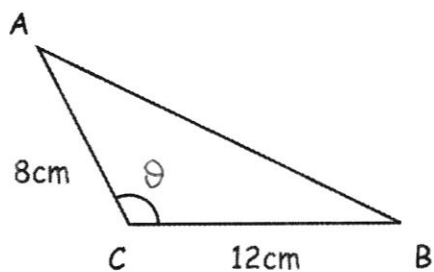
$$(5^2)^{3-9x} = (5^{-3})^{2x-7}$$

$$5^{6-18x} = 5^{21-6x}$$

$$6-18x = 21-6x$$

$$-15 = 12x$$

$$x = -\frac{5}{4}$$



The area of triangle ABC is 30cm^2
 Angle ACB is obtuse.
 Work out the size of angle ACB.

$$\frac{1}{2} \times 8 \times 12 \times \sin \theta = 30$$

$$\sin \theta = \frac{30}{48}$$

$$\theta = \underline{141.3^\circ}$$

Prove that the product of two odd numbers is always odd.

$$(2m+1)(2n+1)$$

$$= 4mn + 2m + 2n + 1$$

$$= 2(2mn + m + n) + 1$$

$$= \underline{\text{odd}}$$

Solve $\cos^2 x = \frac{1}{2}$ for $0^\circ \leq x \leq 360^\circ$

$$\cos x = \pm \frac{1}{\sqrt{2}}$$

$$x = \underline{45^\circ, 135^\circ, 225^\circ, 315^\circ}$$