

6th March



Corbettmaths

Solve

$$\frac{16^{2x+3}}{4^x} = 32$$

$$\frac{(2^4)^{2x+3}}{(2^2)^x} = 2^5$$

$$\frac{2^{8x+12}}{2^{2x}} = 2^5$$

$$= 2^5$$

$$6x + 12 = 5$$

$$6x = -7$$

$$x = -\frac{7}{6}$$

The areas of two mathematically similar shapes are in the ratio 49 : 81

Sides 7 : 9

The length of the smaller shape is 24.5cm

Work out the length of the larger shape.

$$24.5 \div 7 = 3.5$$

$$3.5 \times 9 = 31.5 \text{ cm}$$

Sophie estimated that the distance between Bristol and Newcastle is about 290 miles and that her average driving speed would be 60 mph.

$$t = \frac{d}{s}$$

She estimated the distance to the nearest 10 miles and the speed to the nearest 10 mph.

Calculate the lower bound of the time the journey should take.

Give your answer in hours and minutes.

Give your answer to the nearest minute.

distance UB = 295  
LB = 285

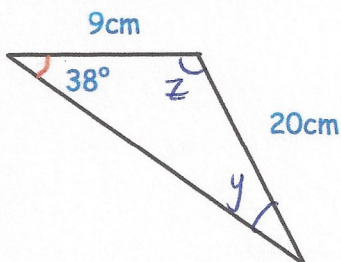
speed UB = 65  
LB = 55

$$\text{Min time} = \frac{\text{min } d}{\text{max } s}$$

$$= \frac{285}{55}$$

$$= 4.3846\dots$$

4 hours 23 minutes



$$\frac{\sin 38}{20} = \frac{\sin y}{9}$$

$$y = 16.084$$

Calculate the area of the triangle

$$Z = 125.916^\circ$$

$$\frac{1}{2} \times 9 \times 20 \times \sin 125.916$$

$$72.889 \text{ cm}^2$$