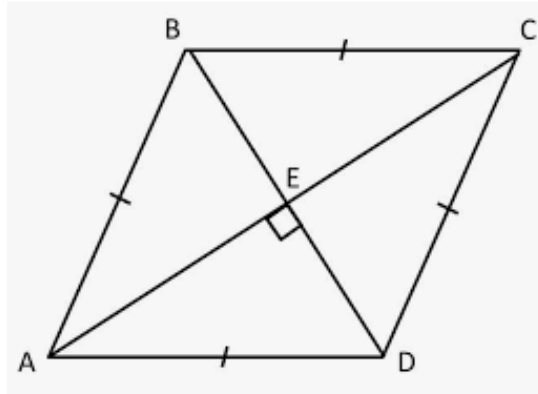


November 29th

Find the area of a rhombus that has side of length of 10cm and diagonals that differ by 4cm.



If $BE = x$, then $EC = x + 2$

(since the half diagonals must differ by 2)

Using Pythagoras in triangle EBC

$$x^2 + (x + 2)^2 = 10^2$$

Hence

$$2x^2 + 4x - 96 = 0$$

$$x^2 + 2x - 48 = 0$$

giving

$$(x + 8)(x - 6) = 0$$

So

$$x = 6 \text{ (ignore negative value of } x)$$

Diagonals are of length 12 and 16

$$\text{Area} = \frac{1}{2} \times 12 \times 16 = \mathbf{96\text{cm}^2}$$