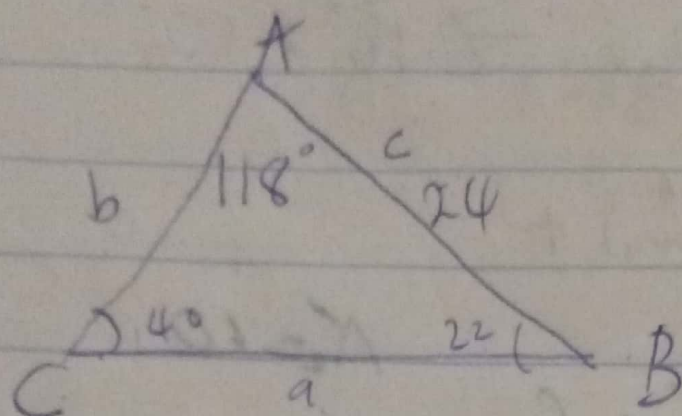


1.

Find AC

$$a^2 = b^2 + c^2 - 2bc \cos C$$

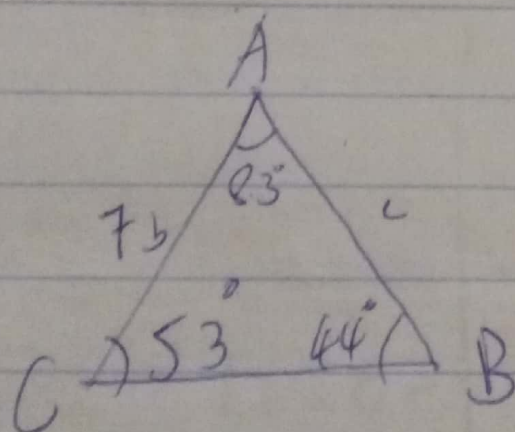


$$\frac{\sin A}{a} = \frac{\sin B}{b}$$

$$\frac{\sin 40}{24} = \frac{\sin 22}{b}$$

$$b = \frac{24 \sin 22}{\sin 40} = 14$$

②

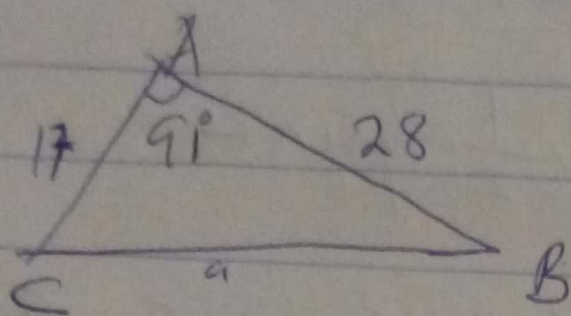


Find AB.

$$\frac{\sin 53}{c} = \frac{\sin 44}{7}$$

$$c = \frac{\sin 53 \times 7}{\sin 44} = 8.0$$

③ Find BC



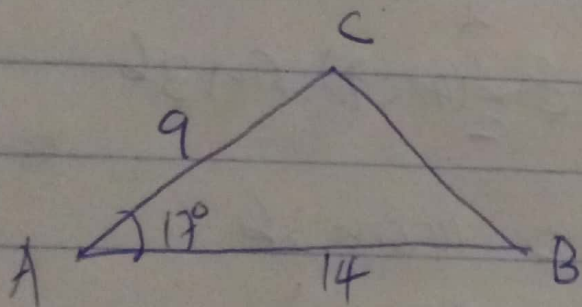
$$a^2 = 17^2 + 28^2 - 2(17)(28) (\text{or } 91)$$

$$= 1073 - 16.6$$

$$a^2 = 1056.4$$

$$a = 32.5$$

④ Find BC



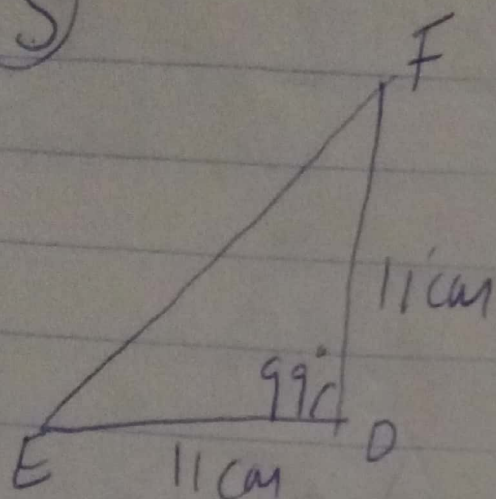
$$a^2 = 9^2 + 14^2 - 2(9)(14) (\text{or } 17)$$

$$= 277 - 24$$

$$a^2 = 36$$

$$a = 6$$

(5)

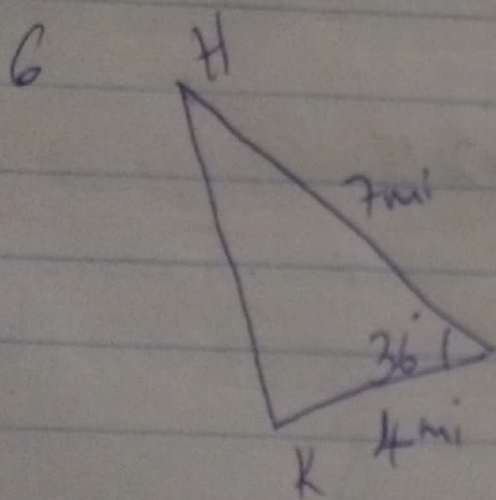


$$\frac{1}{2} ab \sin \theta$$

$$\frac{1}{2} \times 11 \times 11 \times \sin 99$$

$$= 59.75$$

$$\approx 60 \text{ cm}^2$$



$$\frac{1}{2} ab \sin \theta$$

$$= \frac{1}{2} (4)(7) \sin 36$$

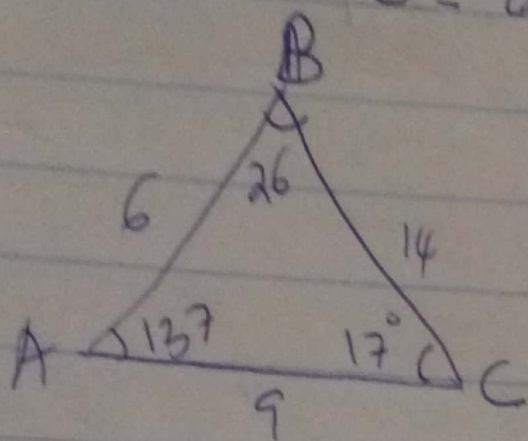
$$= 14 \sin 36$$

$$= 8.2 \text{ mi}^2$$

7 In $\triangle ABC$, $a = 14 \text{ cm}$

$$b = 9 \text{ cm}$$

$$c = 6 \text{ cm}$$



$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$14^2 = 9^2 + 6^2 - 2(9)(6) \cos A$$

$$\cos A = -0.73148$$

$$A = 137^\circ$$

$$b^2 = c^2 + a^2 - 2(ca) \cos B$$

$$9^2 = 6^2 + 14^2 - 2(14)(6) \cos B$$

$$-151 = -168 \cos B$$

$$\cos B = 0.8988$$

$$B = 26^\circ$$

$$A = 137^\circ$$

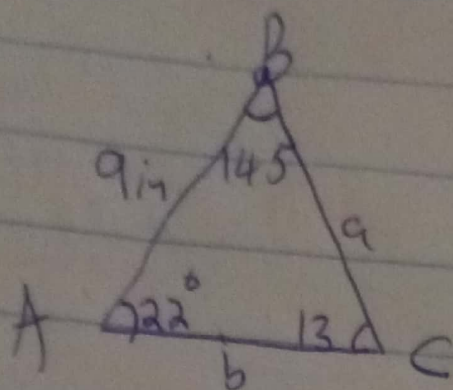
$$B = 26^\circ$$

$$C = 17^\circ$$

⑧ In $\triangle ABC$, $C = 13^\circ$

$$A = 22^\circ$$

$$c = 9 \text{ in}$$



$$\frac{\sin C}{c} = \frac{\sin B}{b}$$

$$= \frac{\sin 13}{9} = \frac{\sin 145}{b}$$

$$b = \frac{9 \sin 145}{\sin 13} = 23 \text{ in}$$

$$a \Rightarrow \frac{\sin 13}{\sin 9} = \frac{\sin 22}{a}$$

$$a = \frac{9 \sin 22}{\sin 13} = 15 \text{ in}$$

$$\therefore \angle B = 145^\circ$$

$$BC = 15 \text{ in}$$

$$AC = 23 \text{ in}$$