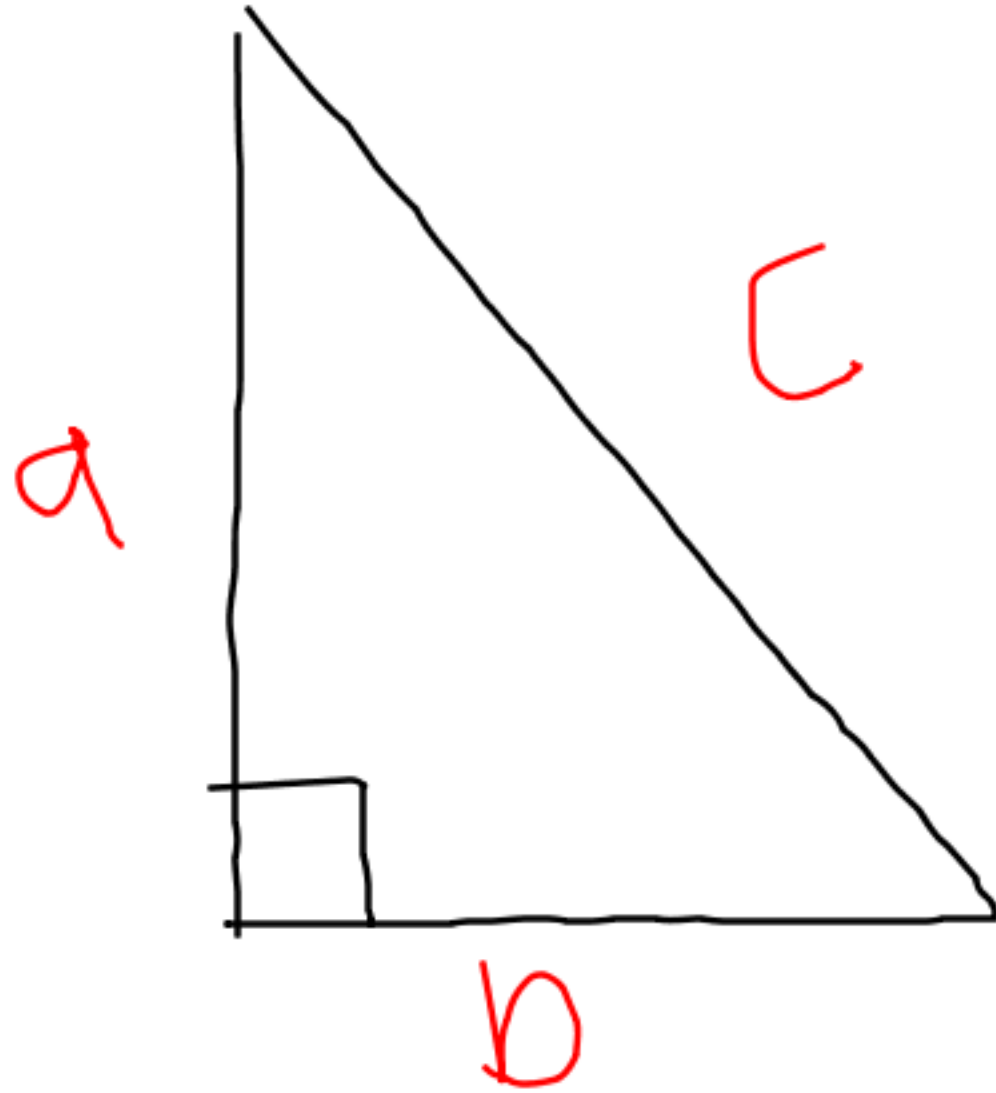


Pythagorean Theorem

$$a^2 + b^2 = c^2$$



right angle



angles add
up to 180°
for all triangles

SOHCAHTOA

$\tan 0.80$

$$\tan^{-1} = 38.7^\circ$$

$\sin 45$

$$\rightarrow 0.7$$

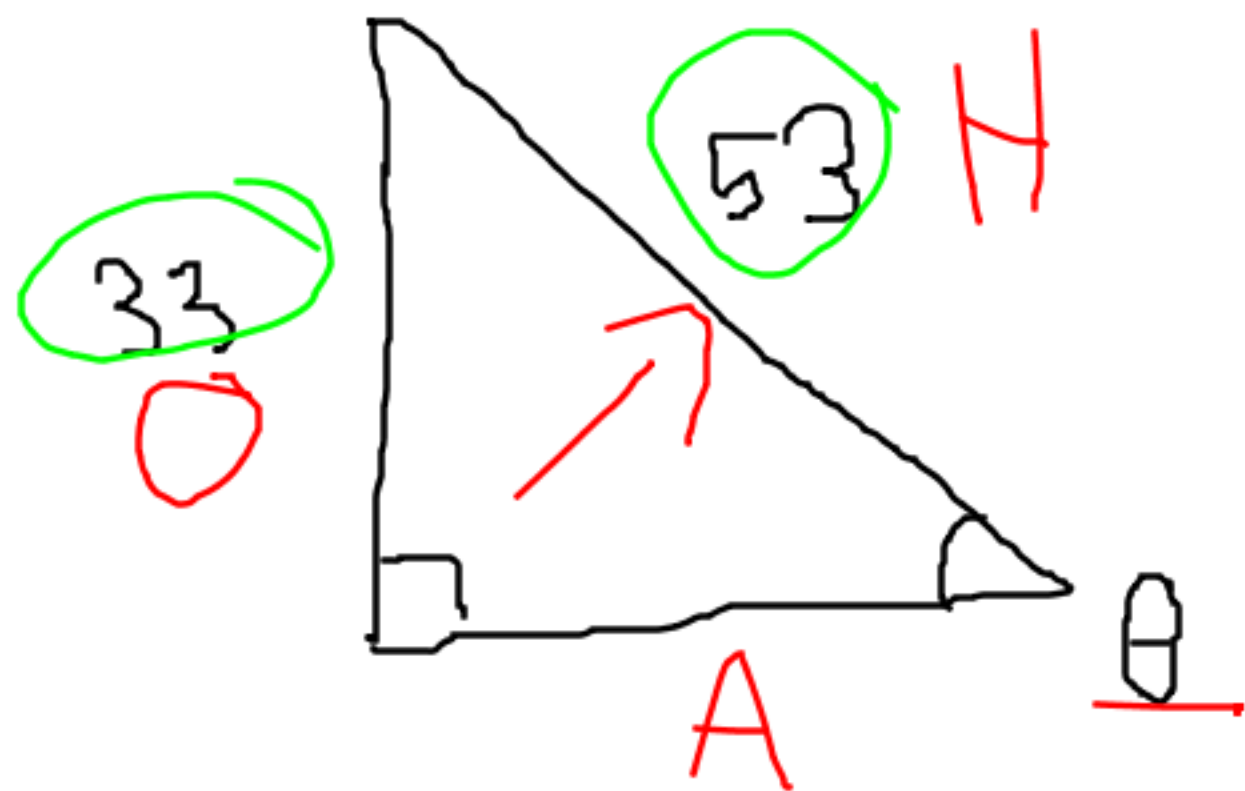
$\cos 0.78$

$$\rightarrow 38.7$$

$$\sin \rightarrow \frac{\text{Opp}}{\text{Hyp}}$$

$$\cos \rightarrow \frac{\text{Adj}}{\text{Hyp}}$$

$$\tan \rightarrow \frac{\text{Adj}}{\text{Opp}}$$



$$\sin \theta = \frac{33}{53}$$

$$\sin \theta = 0.62$$

$$\sin^{-1} = 38.3$$

$$\angle \theta = 38^\circ$$



$$\tan X = \frac{O}{A}$$

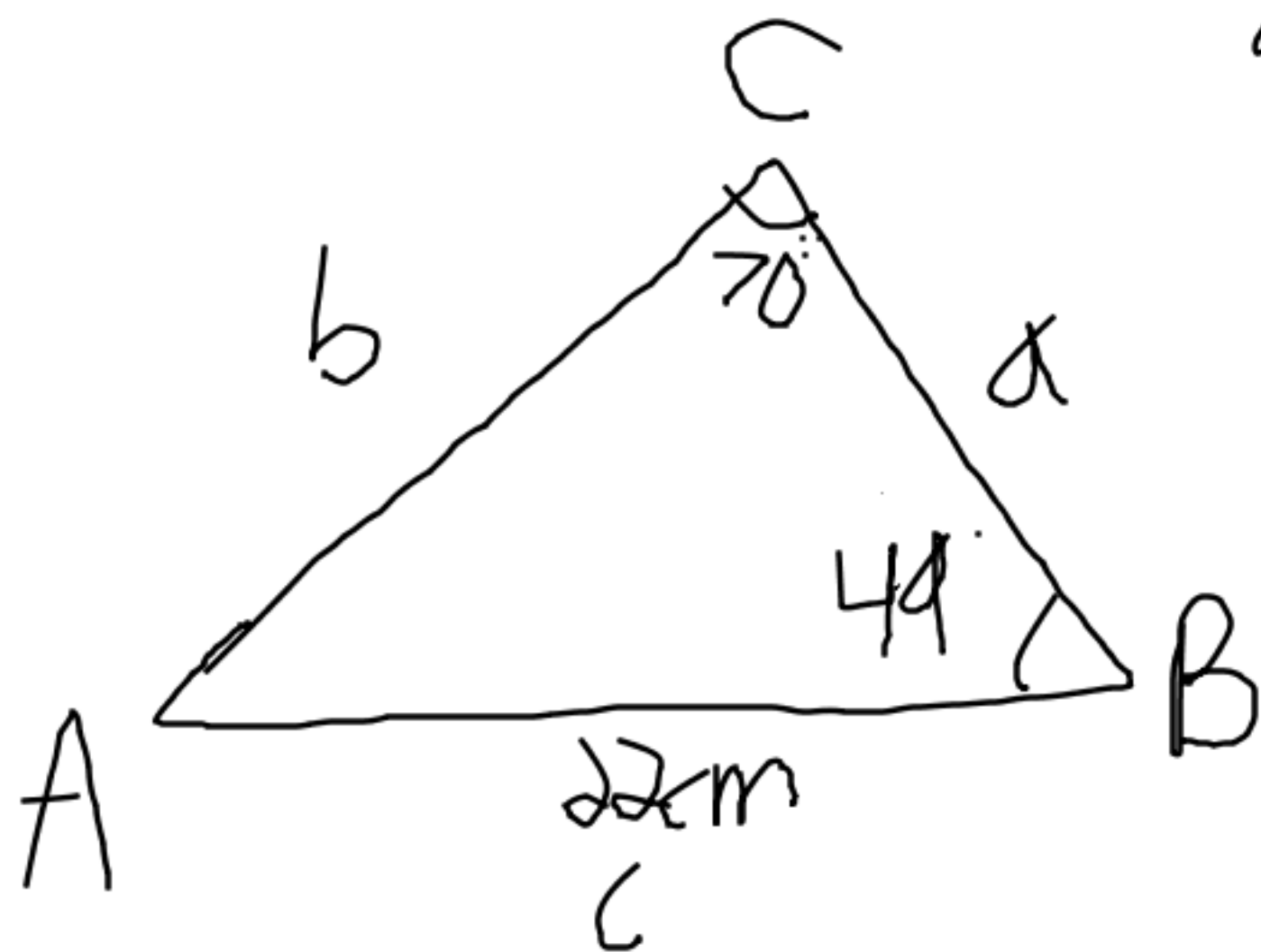
$$\tan 45 = \frac{x}{14}$$

$$x = (\tan 45)(14)$$

$$x = 14$$

Sine Law

★ matching pair

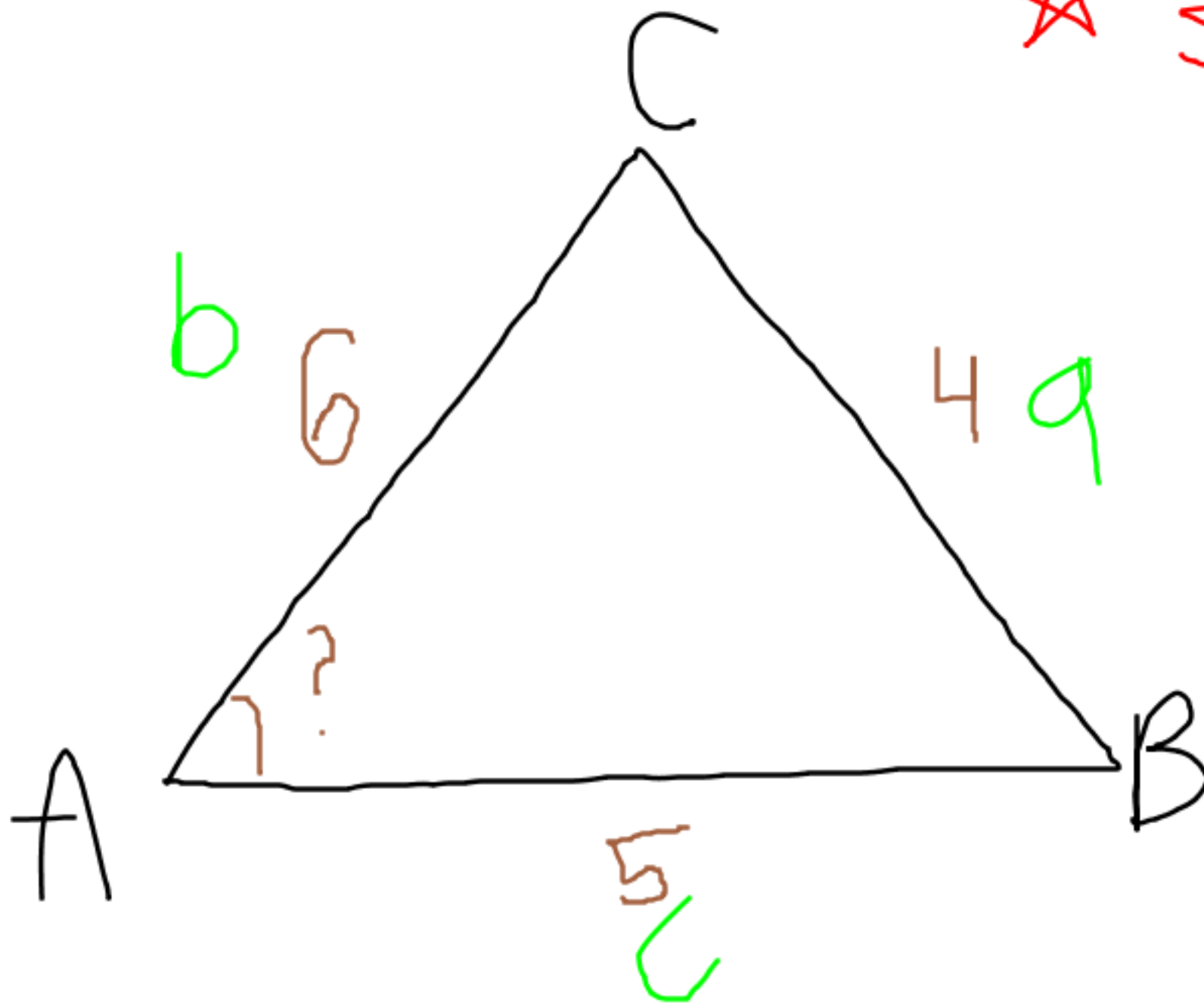


$$\begin{aligned} \angle A &= & a &= \\ \angle B &= 49^\circ & b &= ? \\ \angle C &= 70^\circ & c &= 22 \end{aligned}$$

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

Cosine Law

- ☆ all sides
- ☆ all angles
- ☆ side, angle, side



$$\angle A =$$

$$\angle B =$$

$$\angle C =$$

$$\begin{array}{l} a = 4 \\ b = 6 \\ c = 5 \end{array}$$

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

Sine Law

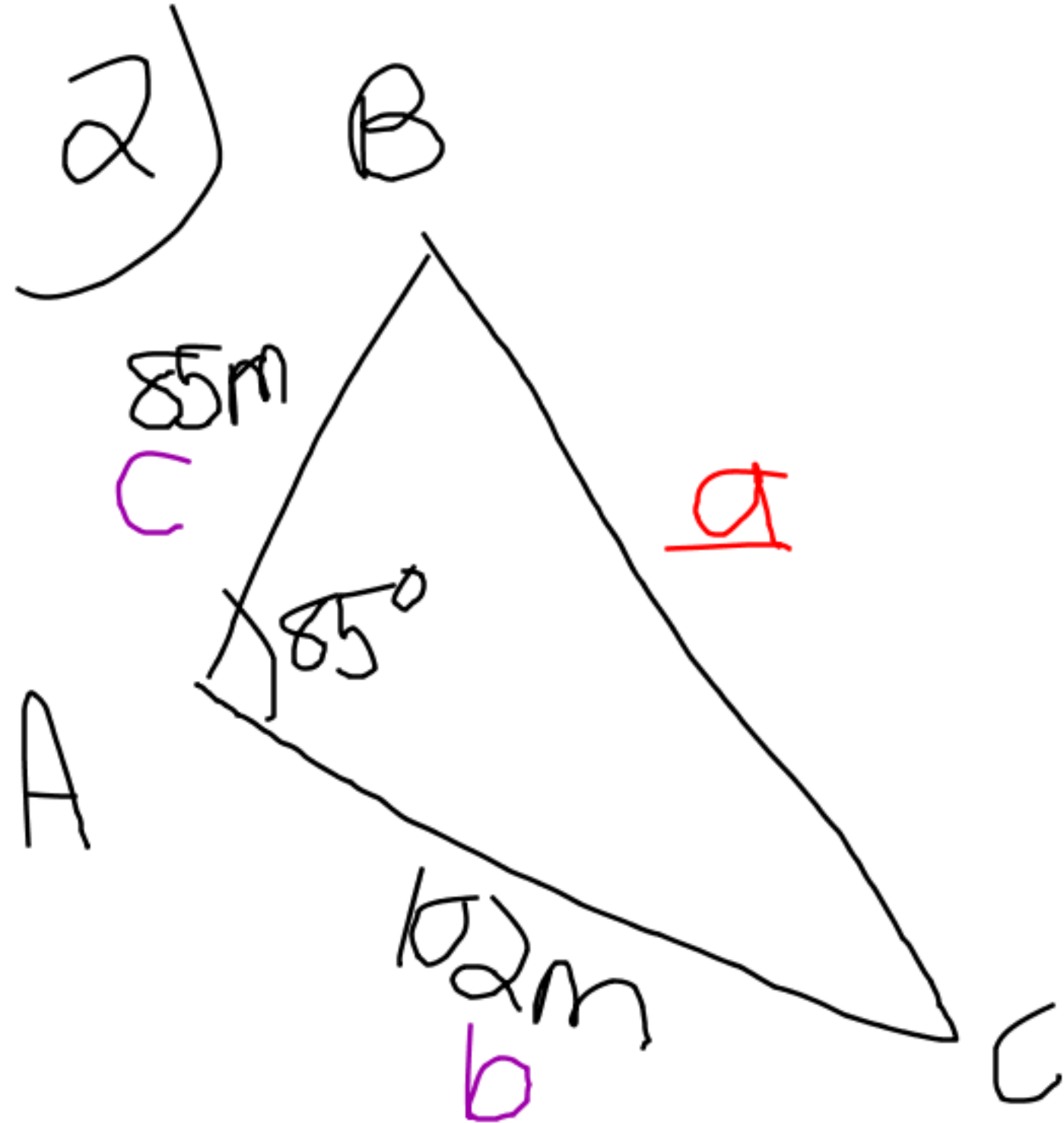
Angle

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

→ matching pair first
→ unknown is the top right

Sides

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



$$\angle A = 85^\circ \quad a = ?$$

$$\angle B = \quad b = 102 \text{ m}$$

$$\angle C = \quad c = 85 \text{ m}$$

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

$$a^2 = 102^2 + 85^2 - [2(102)(85)](\cos 85)$$

$$a^2 = 102^2 + 85^2 - [1511](\cos 85)$$

