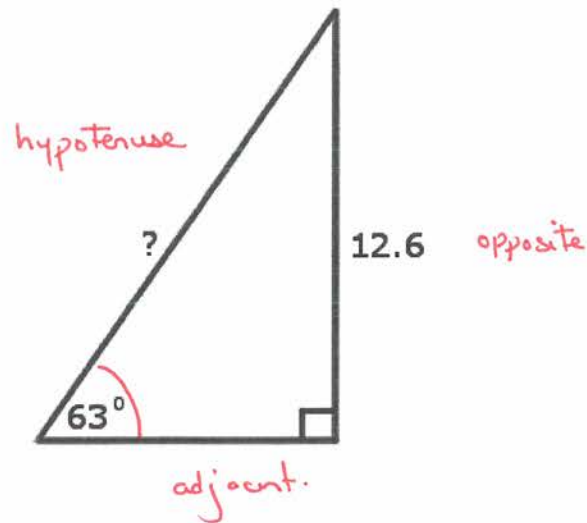


1. Find the value of the missing side marked '?'  
Round your answer to the nearest tenth of a unit.



(SOH) - CAH - TOA.

HAVE: opposite

WANT: hypotenuse

$$\frac{\sin \angle}{1} = \frac{\text{opp}}{\text{hyp}}$$

$$\frac{\sin 63}{1} = \frac{12.6}{x}$$

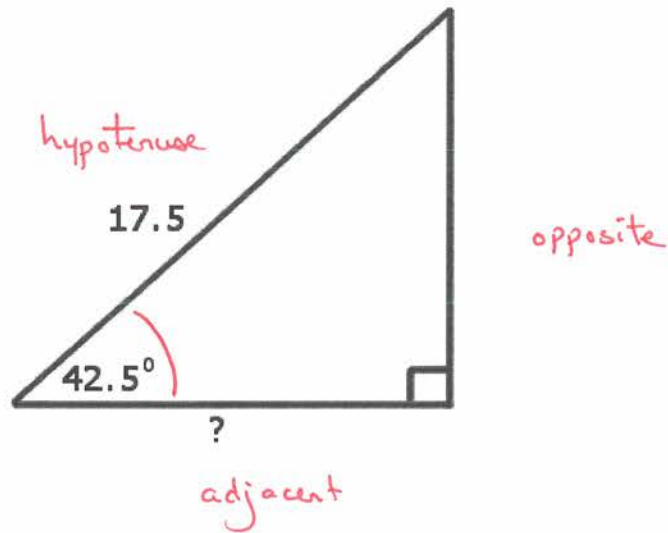
$$x = \frac{(12.6)(1)}{\sin 63}$$

$$x = 14.141$$

ANSWER:

$$x = 14.1$$

2. Find the value of the missing side marked '?'  
Round your answer to the nearest tenth of a unit.



SOH - (CAH) - TOA.

Have: hypotenuse

Want: adjacent

$$\frac{\cos \angle}{1} = \frac{\text{adj.}}{\text{hyp}}$$

$$\frac{\cos 42.5}{1} = \frac{x}{17.5}$$

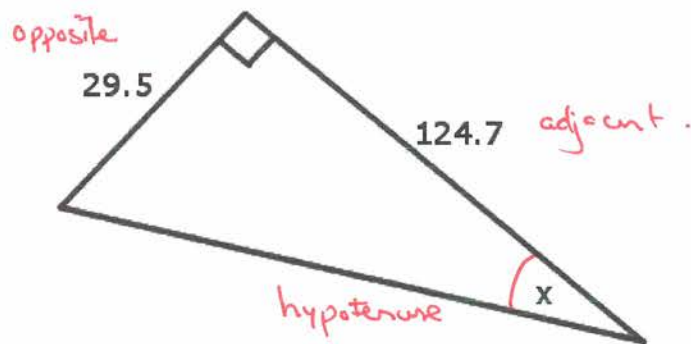
$$x = \frac{(17.5)(\cos 42.5)}{1}$$

$$x = 12.9023$$

ANSWER:

$$x = 12.9$$

3. Find the value of the missing angle marked 'x'  
Round your answer to the nearest tenth of a unit.



SOH - CAH - TOA.

Have: opposite, adjacent

Want:

$$\frac{\tan \angle}{1} = \frac{\text{opp}}{\text{adj}}$$

$$\frac{\tan x}{1} = \frac{29.5}{124.7}$$

$$\cancel{\tan}^{-1} \tan x = \cancel{\tan}^{-1} 0.2365677$$

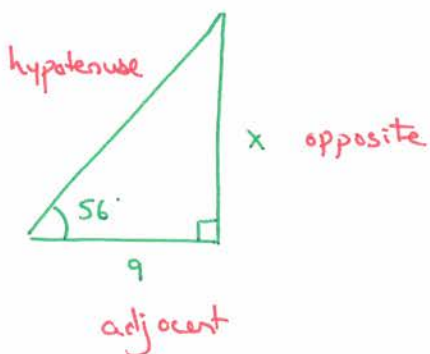
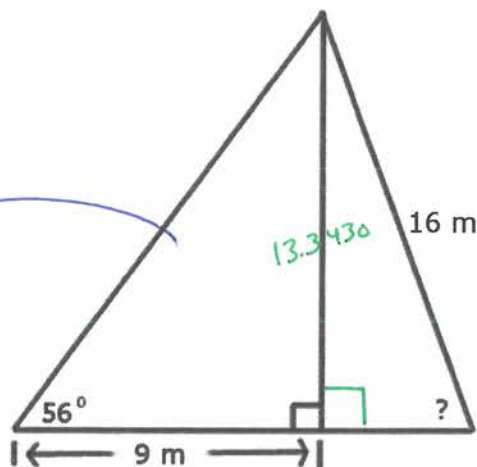
$$x = 13.3096$$

ANSWER

$$x = 13.3^\circ$$

4. Find the value of the missing angle marked '?'  
Round your answer to the nearest tenth of a unit.

STEP 1



SOH - CAH - TOA

HAVE: adjacent

WANT: opposite

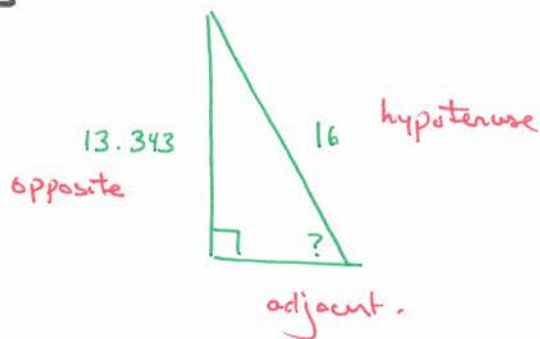
$$\frac{\tan L}{1} = \frac{\text{opp}}{\text{adj}}$$

$$\frac{\tan 56}{1} = \frac{x}{9}$$

$$x = \frac{(9)(\tan 56)}{1}$$

$$x = 13.3430$$

STEP 2



SOH - CAH - TOA

HAVE: opp, hyp

WANT:

$$\frac{\sin L}{1} = \frac{\text{opp}}{\text{hyp}}$$

$$\frac{\sin ?}{1} = \frac{13.343}{16}$$

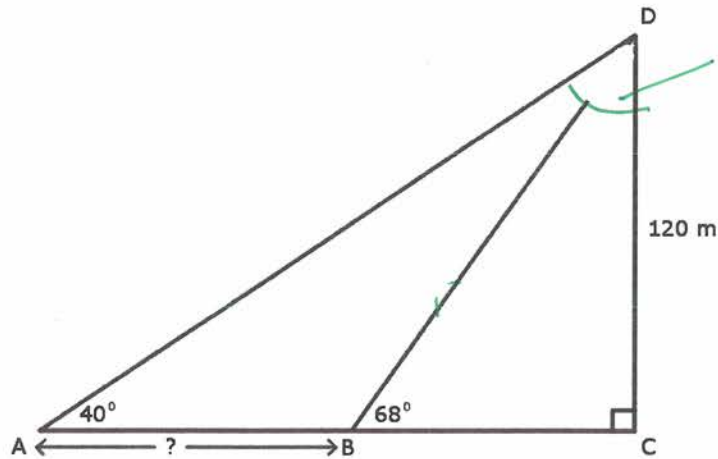
$$\sin^{-1} \sin ? = \sin^{-1} 0.83394$$

$$? = 56.50$$

ANSWER:

$$? = 56.5^\circ$$

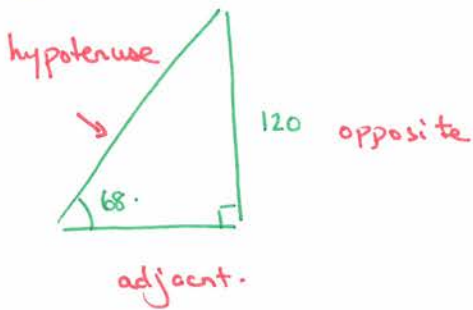
5. Find the length of line segment AB.  
Round your answer to the nearest tenth of a meter.



$$= 180^\circ - 90^\circ - 40^\circ$$

$$= 50^\circ$$

STEP 1



SOH - CAH - TOA

Have: opposite  
Want: adjacent

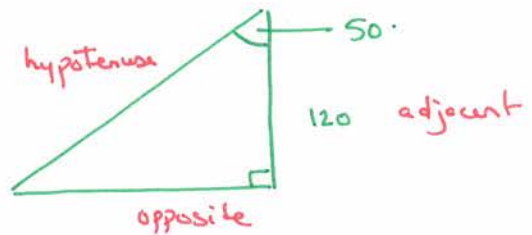
$$\frac{\tan \angle}{1} = \frac{\text{opp}}{\text{adj}}$$

$$\frac{\tan 68}{1} = \frac{120}{x}$$

$$x = \frac{(120)(1)}{\tan 68}$$

$$x = 48.483$$

STEP 2



SOH - CAH - TOA

Have: adjacent  
Want: opposite

$$\frac{\tan \angle}{1} = \frac{\text{opp}}{\text{adj}}$$

$$\frac{\tan 50}{1} = \frac{x}{120}$$

$$x = (120)(\tan 50)$$

$$x = 143.010$$

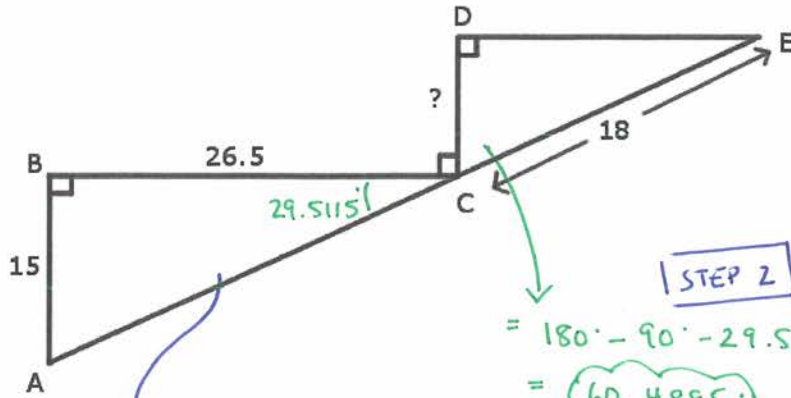
STEP 3

$$m \overline{AB} = 143.010 - 48.483$$

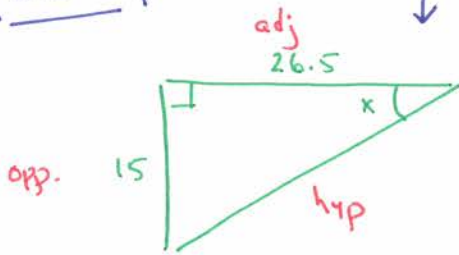
$$m \overline{AB} = 94.5$$

ANSWER:

6. Find the length of line segment CD  
Round your answer to the nearest tenth of a unit.



STEP 1



SOH - CAH - TOA

Have: opp., adj.

Want:

$$\frac{\tan \angle}{1} = \frac{\text{opp}}{\text{adj}}$$

$$\frac{\tan x}{1} = \frac{15}{26.5}$$

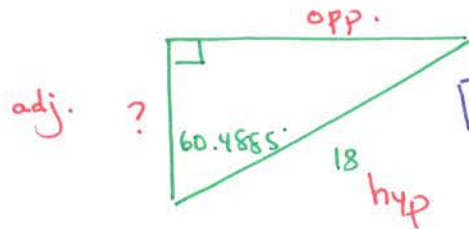
$$\cancel{\tan} x = \tan^{-1} 0.56603$$

$$x = 29.5115^\circ$$

STEP 2

$$= 180^\circ - 90^\circ - 29.5115^\circ$$

$$= 60.4885^\circ$$



STEP 3

SOH - CAH - TOA

Have: hyp.

Want: adj.

$$\frac{\cos \angle}{1} = \frac{\text{adj.}}{\text{hyp}}$$

$$\frac{\cos 60.4885}{1} = \frac{?}{18}$$

$$? = \frac{(18)(\cos 60.4885)}{1}$$

$$? = 8.86676$$

ANSWER:

$$? = 8.9$$