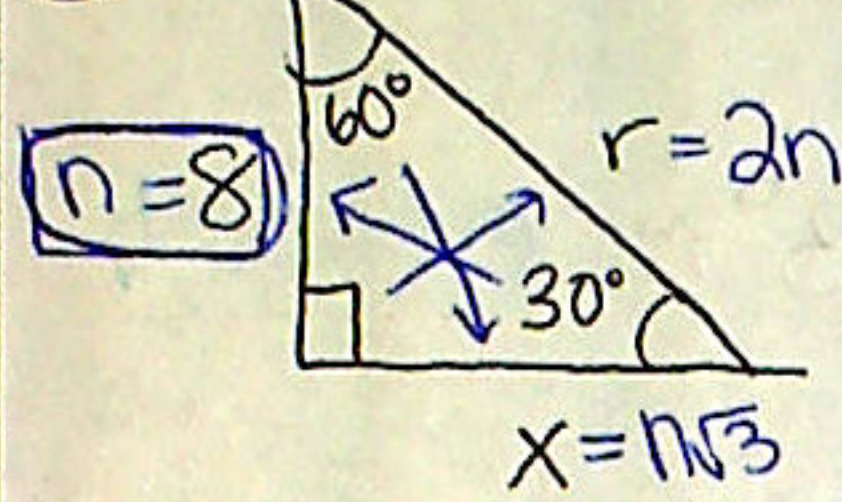


Unit 8 Review

(SOH) CAH TOA

① Find x and r.



$r = 2n$
 $30:60:90$
 $n:n\sqrt{3}:2n$

$n = 8$

$x = n\sqrt{3}$

① Find n:
 $n = 8$

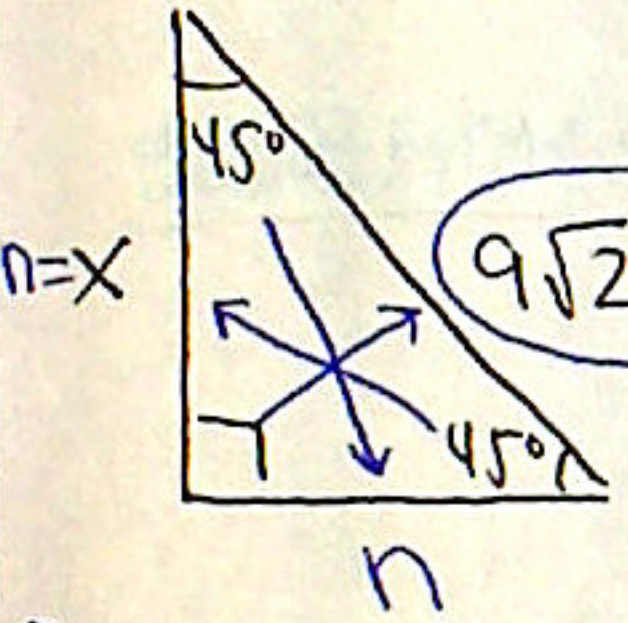
② Find x and r:

$x = n\sqrt{3}$ plug in $n = 8$
 $x = 8\sqrt{3}$

$r = 2n$
 $r = 2(8)$
 $r = 16$

② Find x.

$45:45:90$
 $n:n:n\sqrt{2}$



$9\sqrt{2} = n\sqrt{2}$

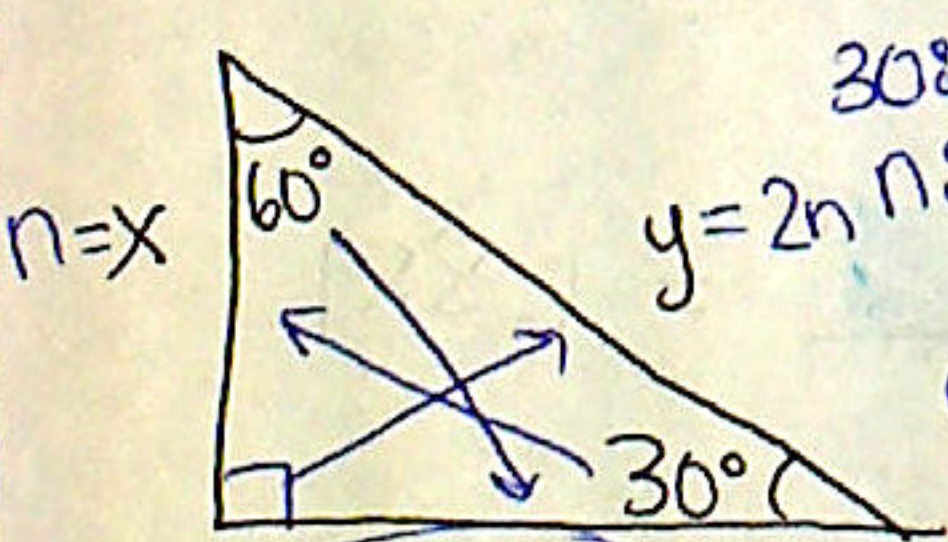
② Find x

$n = x$
 $9 = x$

① Find n:

$\frac{9\sqrt{2}}{\sqrt{2}} = \frac{n\sqrt{2}}{\sqrt{2}}$
 $9 = n$

③ Find x and y.



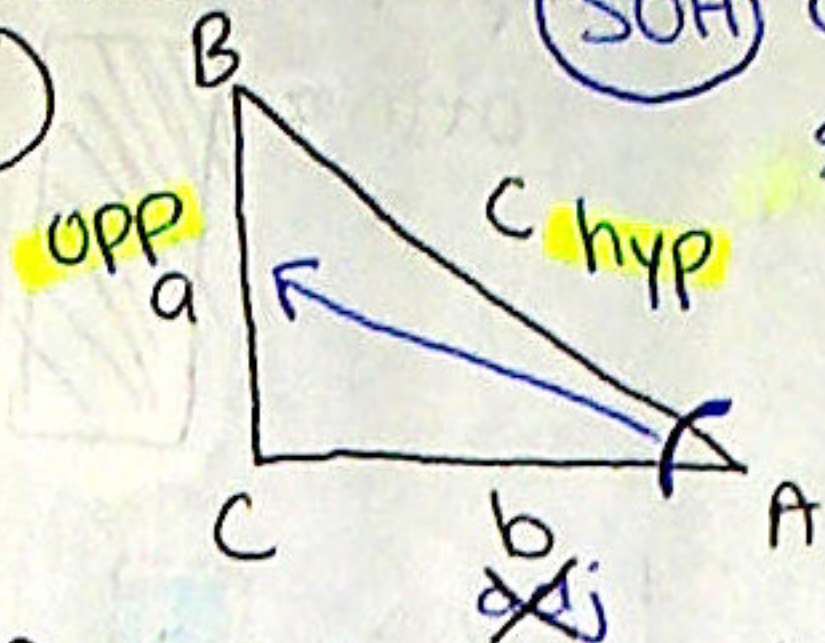
$30:60:90$
 $y = 2n$
 $n:n\sqrt{3}:2n$

② $n = x$
 $4 = x$

$y = 2n$
 $y = 2(4)$
 $y = 8$

$n\sqrt{3} = 4\sqrt{3}$
 $\frac{n\sqrt{3}}{\sqrt{3}} = \frac{4\sqrt{3}}{\sqrt{3}}$
 $n = 4$

④

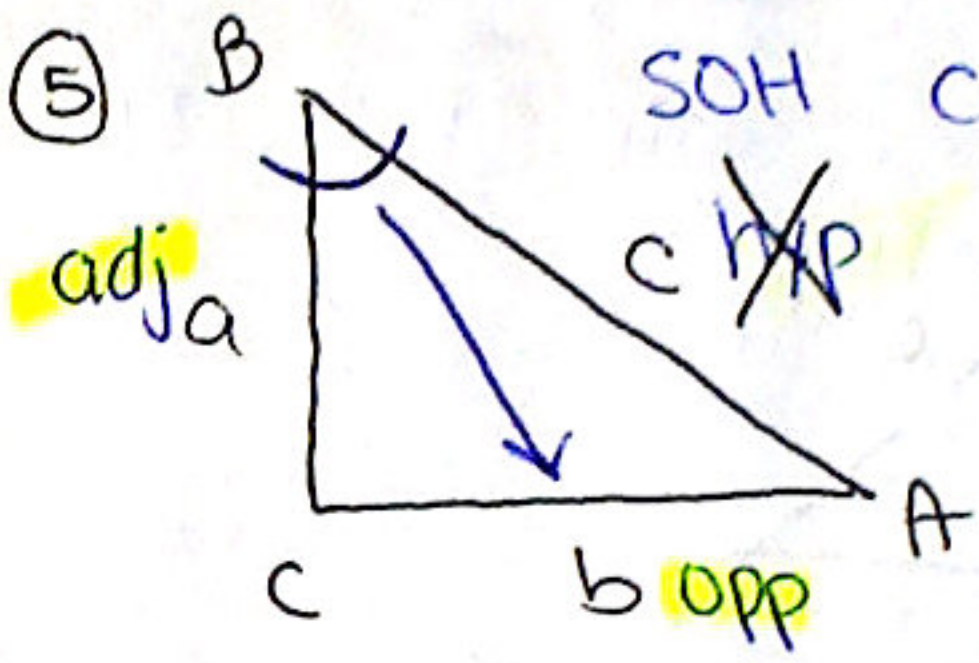


$S = \frac{O}{H}$

Complete the ratio:

$\sin(A) = \frac{a}{c}$

⑤

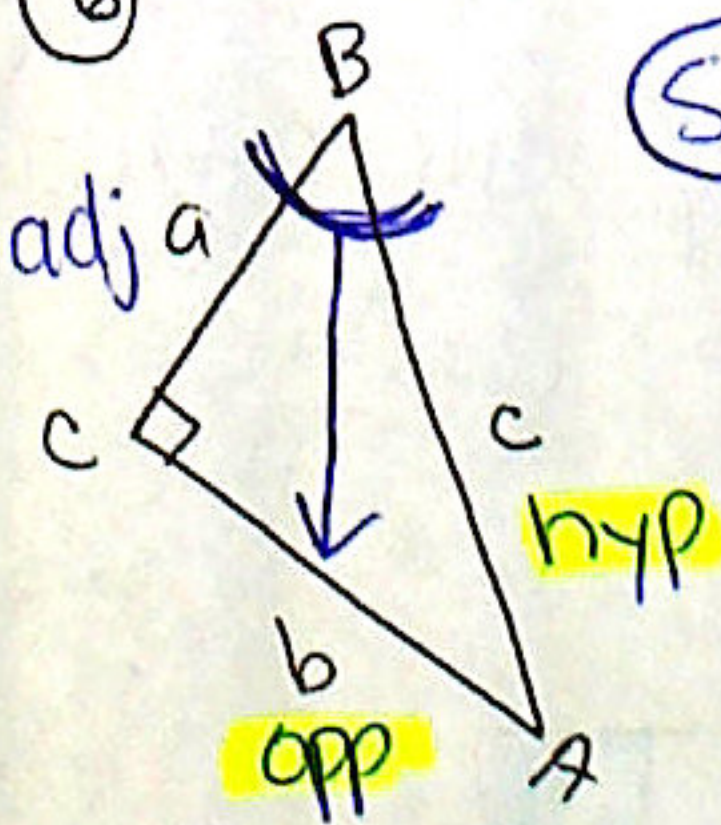


(TOA)
 $T = \frac{O}{A}$

Complete the ratio:

$\tan(B) = \frac{b}{a}$

⑥



(SOH) CAH TOA

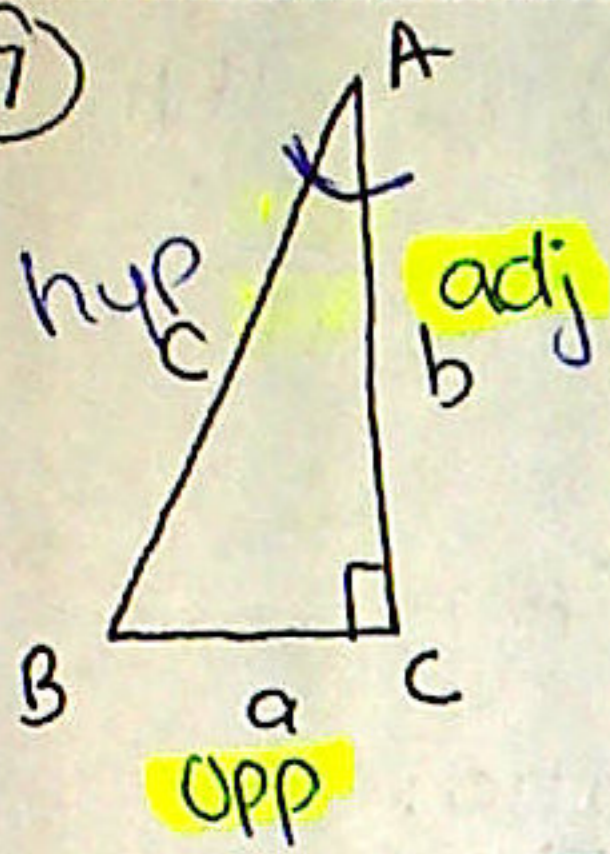
$S = \frac{O}{H}$

Complete the ratio:

$\sin(B) = \frac{b}{c}$

7

Complete the ratio



$$\tan(A) = \frac{a}{b}$$

SOH CAH **TOA**

$$T = \frac{O}{A}$$

10

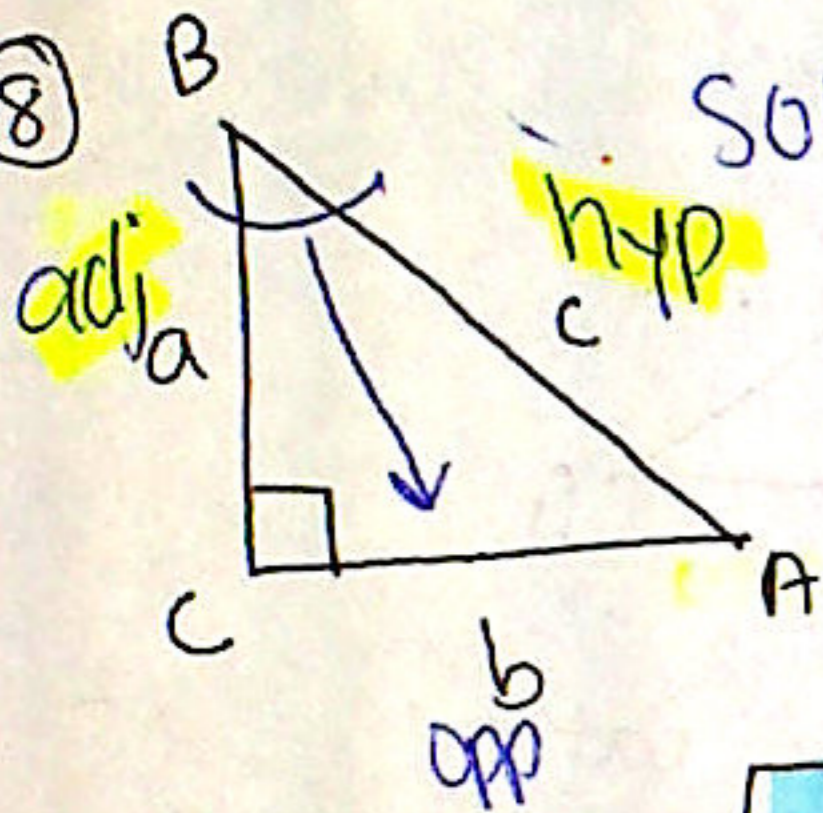
Find

$$\sin 23^\circ \approx \underline{0.3907}$$

* Use the chart!

8

SOH **CAH** TOA



$$C = \frac{A}{H}$$

$$\cos(B) = \frac{a}{c}$$

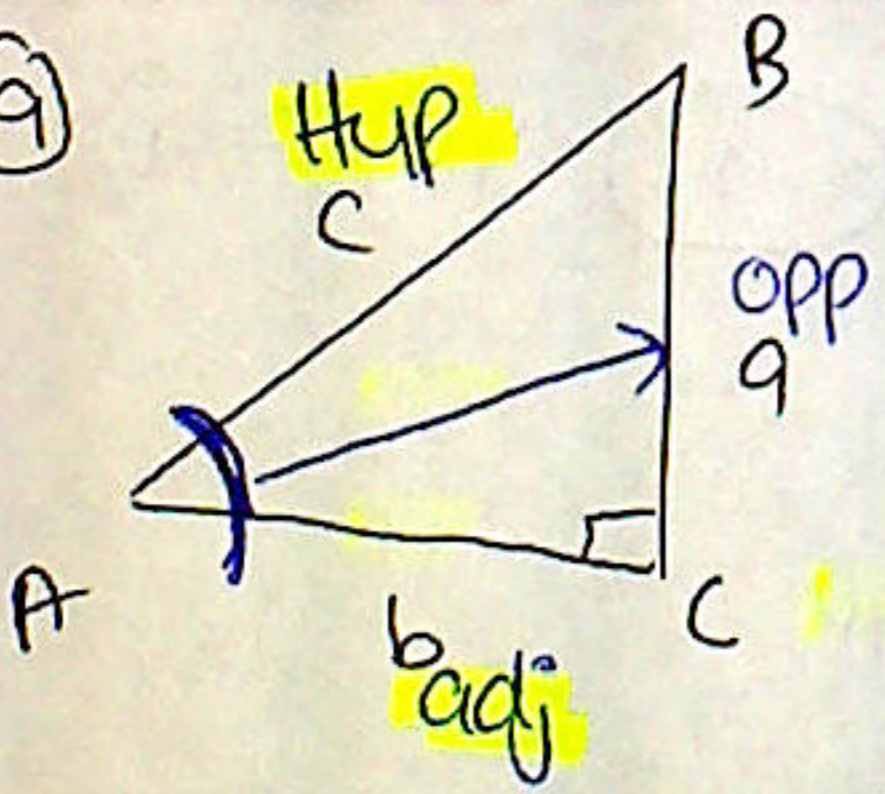
11

Find

$$\cos 82^\circ \approx \underline{0.1392}$$

9

SOH **CAH** TOA



$$C = \frac{A}{H}$$

$$\cos(A) = \frac{b}{c}$$

12

Find

$$\tan 62^\circ = 1.881$$

13 Find

$$\cos 56^\circ \approx 0.5592$$

16 Solve for x:

$$\sin 35^\circ = \frac{x}{20}$$

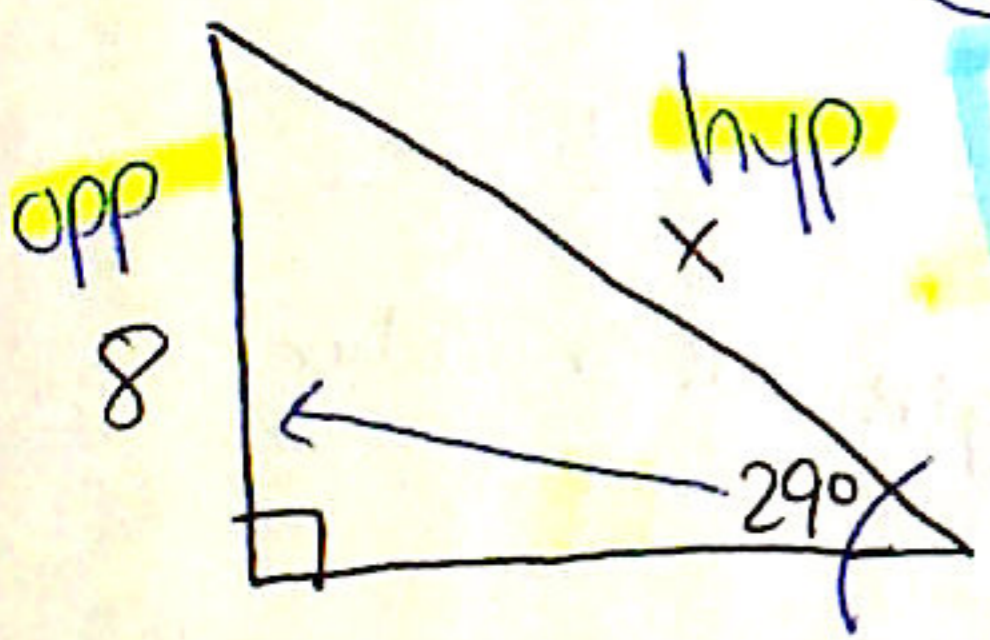
$$20 \cdot \sin 35^\circ = \frac{x}{20} \cdot 20$$

$$20 \cdot 0.5736 = x$$

$$11.47 = x$$

14 Set up a correct ratio to find x:

SOH CAH TOA



$$\sin 29^\circ = \frac{8}{x}$$

or

$$x = \frac{8}{\sin 29^\circ}$$

17 Solve for x:

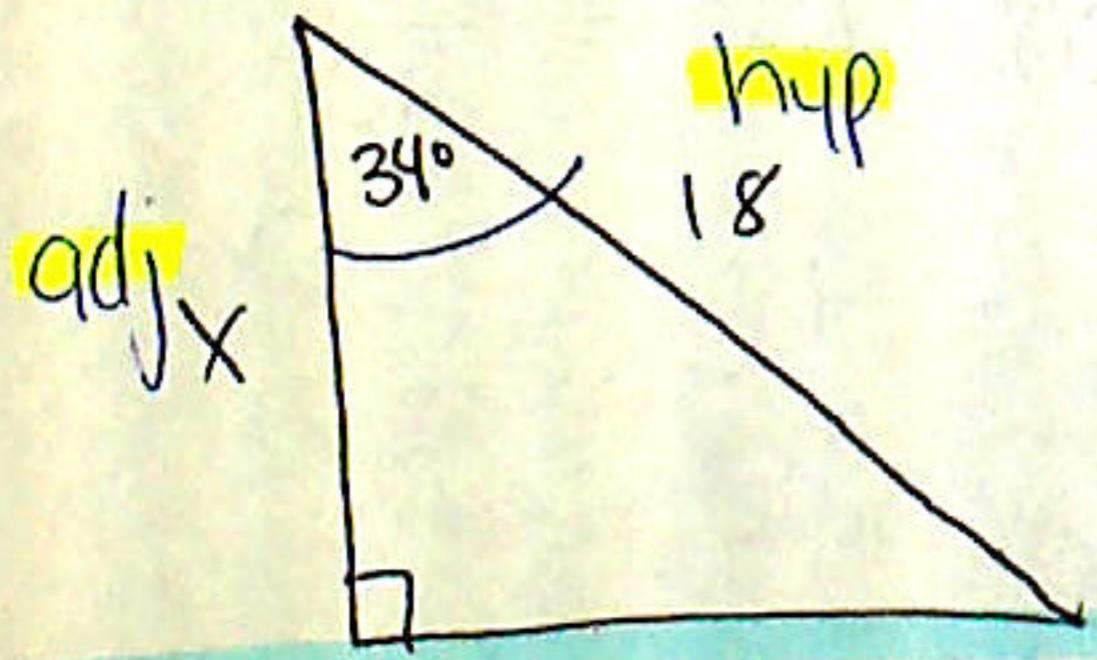
$$\sin 64^\circ = \frac{20}{x}$$

$$x = \frac{20}{\sin 64^\circ}$$

$$x = \frac{20}{0.8988}$$

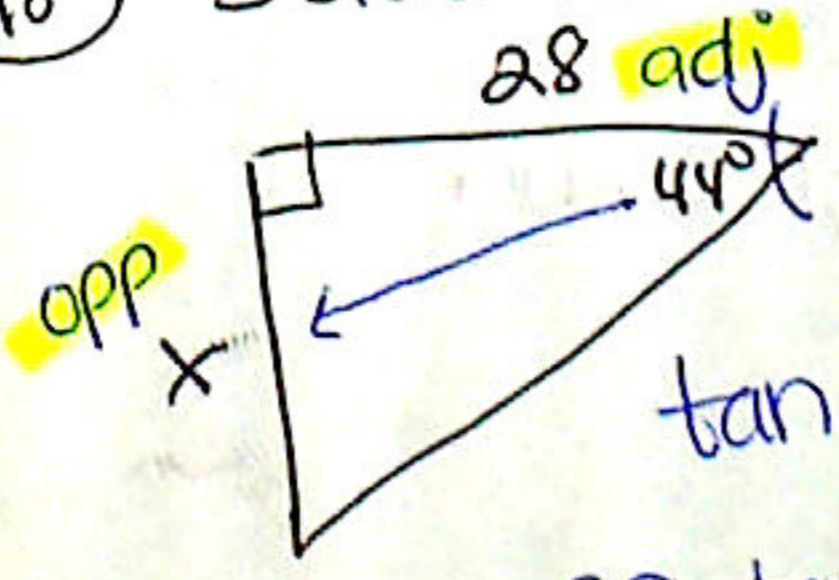
$$x = 22.25$$

15 Set up ratio:



$$\cos 34^\circ = \frac{x}{18} \text{ or } 18 \cos 34^\circ = x$$

18 Solve for x:



SOH CAH TOA

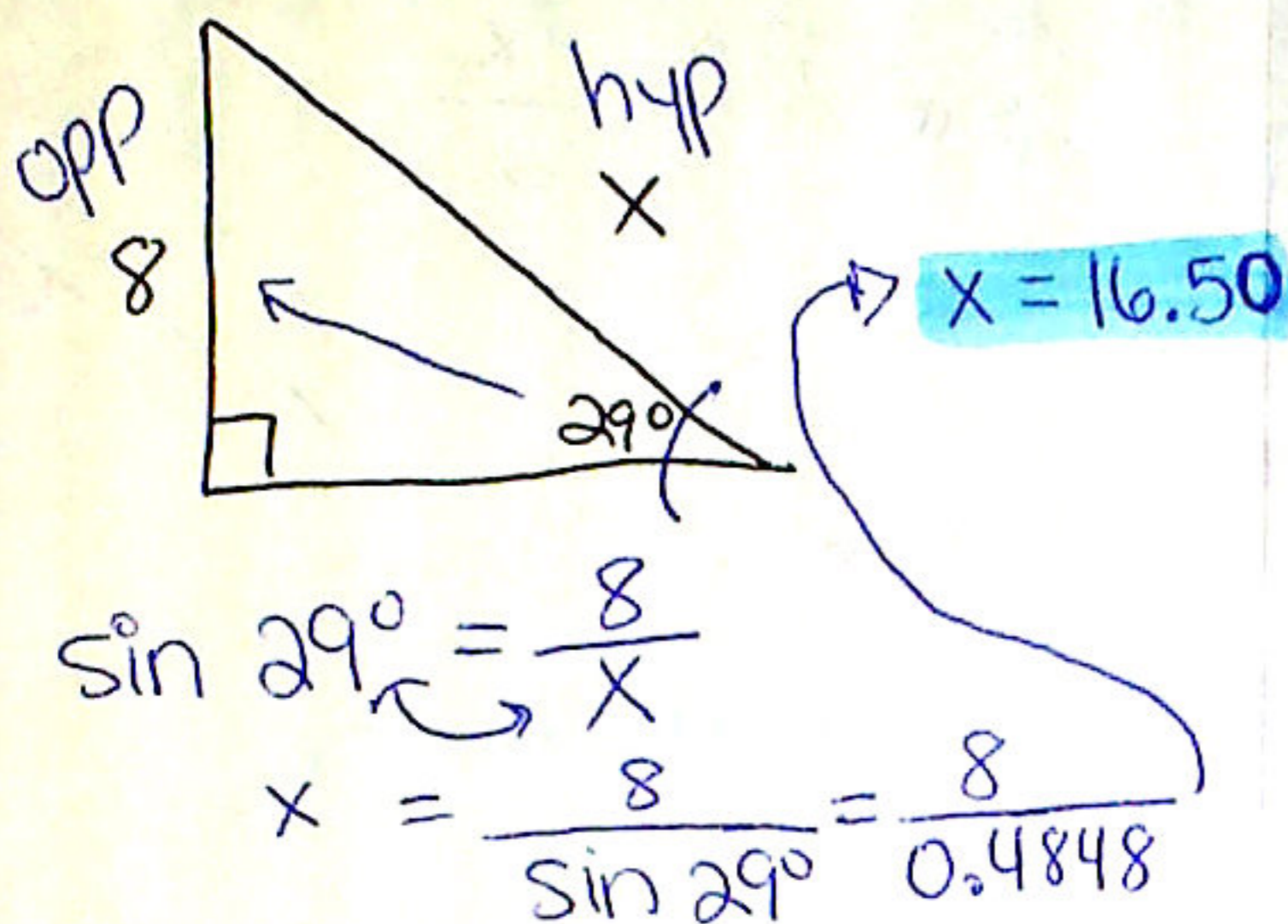
$$\tan 44^\circ = \frac{x}{28}$$

$$28 \cdot \tan 44^\circ = \frac{x}{28} \cdot 28$$

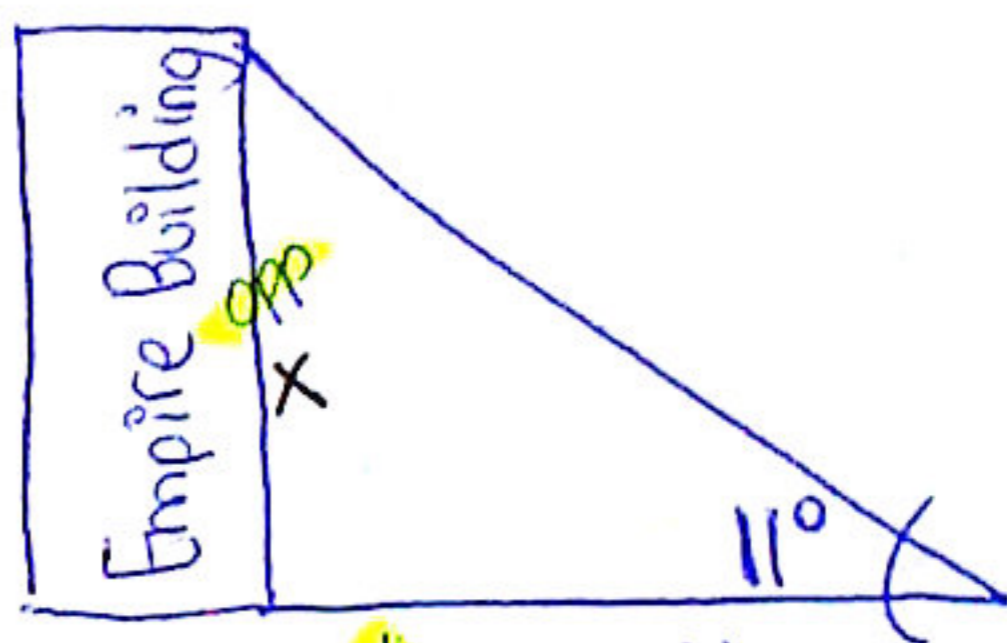
$$28 \cdot 0.9657 = x$$

$$27.04 = x$$

19) Solve for x:



21) The angle of elevation to the top of the Empire State Building in New York is found to be 11° from the ground at a distance of 1 mile from the building. Using this information, find the height of the Empire State Building.



$x = \text{height of building}$
 SOH CAH **TOA**

$$\tan 11^\circ = \frac{x}{1}$$

$$0.1944 = x$$

22) Solve for x:

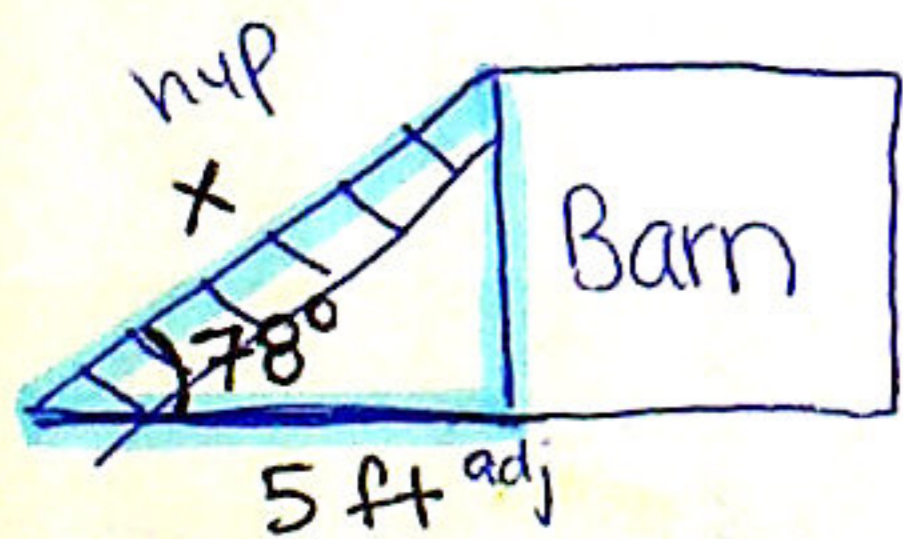
$$\cos 72^\circ = \frac{x}{12}$$

$$12 \cos 72^\circ = \frac{x}{12}$$

$$12(0.3090) = x$$

$$3.71 = x$$

20) A ladder leaning up against a barn makes an angle of 78° with the ground when the ladder is 5 ft. away from the barn. How long is the ladder?



x = length of ladder

SOH **CAH** TOA

$$\cos 78^\circ = \frac{5}{x}$$

$$x = \frac{5}{\cos 78^\circ} = \frac{5}{0.2079}$$

$$x = 24.05$$