

Chapter 9 Review

Determine if the following side lengths form an acute, right, or obtuse triangle.

22, 14, 26

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

$$22^2 + 14^2 = 26^2$$

$$484 + 196 = 676$$

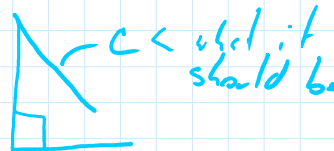
$$680 \neq 676$$

$$680 > 676$$

$$a^2 + b^2 > c^2$$

Acute \triangle

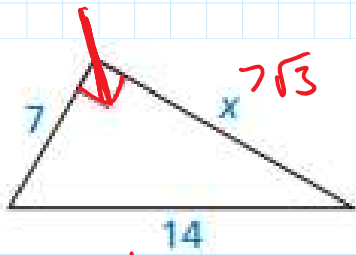
$$\begin{array}{r} 11 \\ 484 \\ 196 \\ \hline 680 \end{array}$$



2

Find the value of x . Then tell whether the side lengths form a Pythagorean triple.

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



No, not a P.T.

in P.T all sides are integers.

$$7^2 + x^2 = 14^2$$

$$49 + x^2 = 196$$

$$-49 \quad -49$$

$$\sqrt{x^2} = \sqrt{147}$$

$$x = 7\sqrt{3}$$

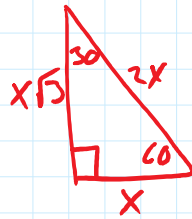
$$147$$

$$\wedge$$

$$3 \quad 49$$

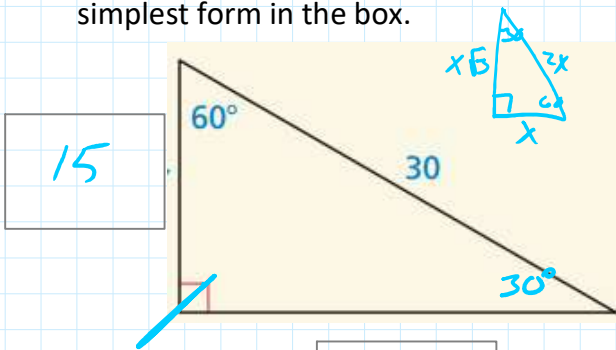
$$\equiv$$

$$\textcircled{7 \times 7}$$



3

Find the length of each side of the right triangle. Write your answer in simplest form in the box.



$$15\sqrt{3}$$

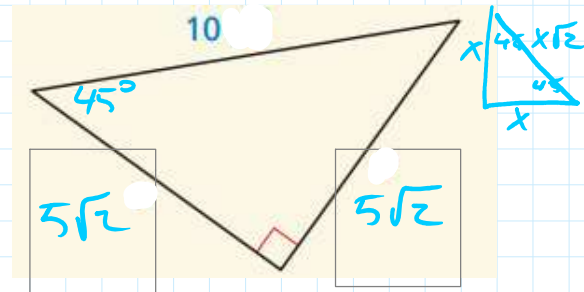
$$\text{hyp} = 2l$$

$$\frac{30}{2} = \frac{2l}{2}$$

$$15 = l$$

$$ll = 2l\sqrt{3}$$

$$l = 15\sqrt{3}$$



$$\text{hyp} = l\sqrt{2}$$

$$\frac{10}{\sqrt{2}} = \frac{l\sqrt{2}}{\sqrt{2}}$$

$$\frac{10}{\sqrt{2}} = l$$

$$\frac{10}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$$

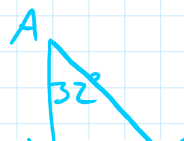
$$\frac{10\sqrt{2}}{2} = 5\sqrt{2}$$

3

Rewrite the statement in terms of cosine.

$$\frac{8}{10}$$

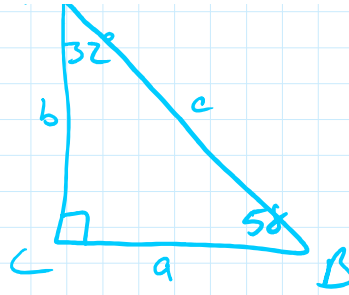
$$-32$$



$$\sin 32^\circ = \cos 58^\circ$$

$$\frac{5299}{10000} = \frac{5299}{10000}$$

$$\begin{array}{r} 76 \\ -32 \\ \hline 58 \end{array}$$



Rewrite the statement in terms of sine.

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$$\cos 14^\circ = \sin 76^\circ$$

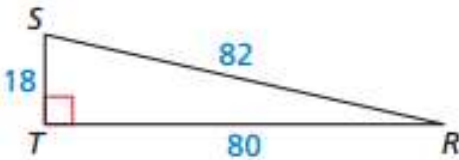
$$\begin{array}{r} 8 \\ \times 10 \\ \hline 14 \\ \hline 76 \end{array}$$

$$\sin B = \frac{b}{c} \rightarrow \sin 58^\circ = \frac{b}{c}$$

$$\cos A = \frac{b}{c} \rightarrow \cos 32^\circ = \frac{b}{c}$$

Find $\tan(S)$ and $\tan(R)$. Write each answer as a fraction and as a decimal rounded to four decimal places.

SOH-CAH-TOA



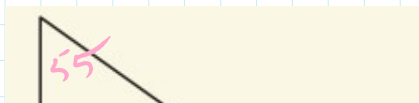
$$\tan S = \frac{80}{18} \approx 4.4444$$

$$\tan R = \frac{18}{80} \approx .2250$$

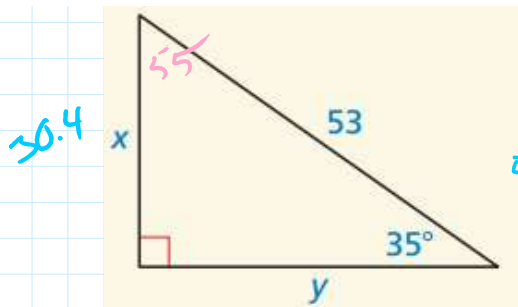
2

Find the value of x and y . Round your answer to the nearest tenth.

SOH-CAH-TOA



$$\sin 35^\circ = \frac{x}{53}$$



30.4

43.4

$$\sin 35^\circ = \frac{x}{53}$$

$$53(.5736) = \left(\frac{x}{53}\right) 53$$

$$30.4 = x$$

$$\cos 35^\circ = \frac{y}{53}$$

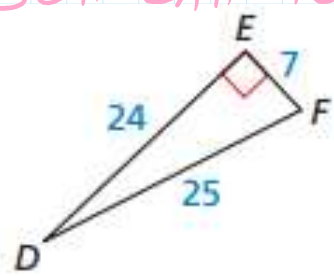
$$53(.8192) = \left(\frac{y}{53}\right) 53$$

$$43.4 = y$$

2

Use the figure to answer the following questions. Write your answer as a fraction and as a decimal rounded to four decimal places.

SOH-CAH-TOA

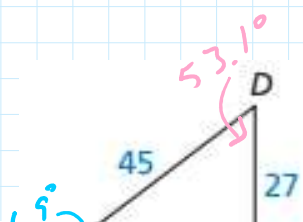


$$\sin F = \frac{24}{25} \approx .9600$$

$$\cos F = \frac{7}{25} \approx .2800$$

4

Find the measures of angles D and E. Use the diagram provided.



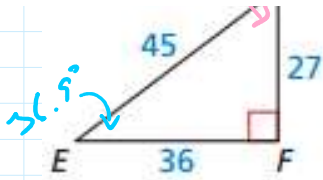
SOH-CAH-TOA

$$\tan D = \frac{36}{27}$$

$$\sin E = \frac{27}{45}$$

$$\angle D = \tan^{-1} \frac{36}{27}$$

$$\angle E = \sin^{-1} \frac{27}{45}$$



$$\cancel{\sin} \theta = \frac{36}{45}$$

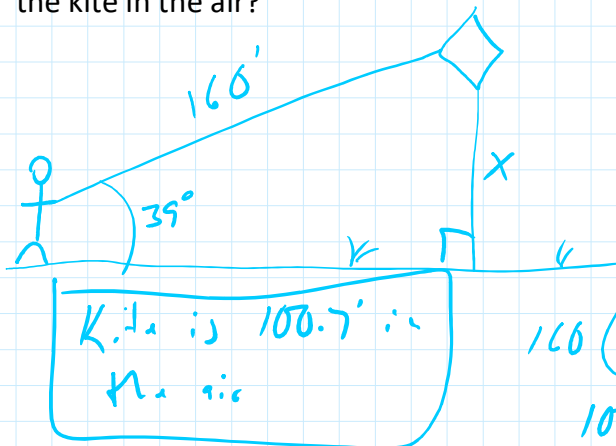
$$\theta = \sin^{-1} \frac{36}{45}$$

$$\theta = 53.1^\circ$$

$$\cancel{\sin} E = \frac{27}{45}$$

$$E = 36.9$$

You go to the park on a windy day to fly a kite. You have released 160 feet of string. The string makes an angle of 39° with the ground. How high is the kite in the air?



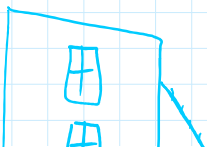
SOH CAH TOA

$$\sin 39^\circ = \frac{X}{160}$$

$$160 (.6293) = \left(\frac{X}{160}\right) 160$$

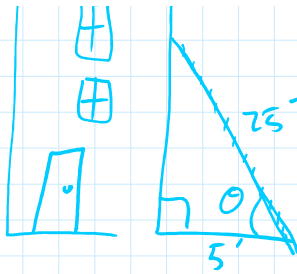
$$100.7 = X$$

A 25-foot ladder is resting against the side of a building. The bottom of the ladder is 5 feet from the building. Find the measure of the angle the ladder makes with the ground. Round your answer to the nearest tenth of a degree.



SOH-CAH-TOA

$$\cos \theta = \frac{5}{25}$$



78.5° \angle ladder
to ground.

$$\cos \theta = \frac{5}{25}$$
$$\cos^{-1} \cos \theta = \cos^{-1} \frac{5}{25}$$
$$\theta = 78.5^\circ$$

|

The End!

21 total questions.
Notecard allowed!
Graphing calculator allowed!

Good luck

Practice Test pg.
523: 1-14A

