

Solving Right Triangles Using **SOH-CAH-TOA**

Directions: Use a calculator to approximate the given value to the nearest tenth.

1. $\sin(48) = .7$

2. $\tan A = 2.2 \quad 65.6^\circ$

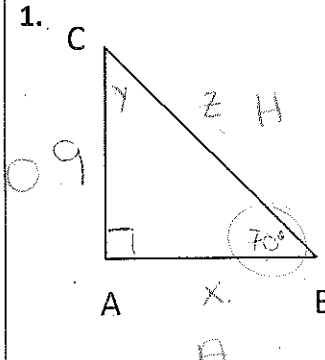
3. $\tan(66) = 2.2$

4. $\cos A = .64 \quad 50.2^\circ$

Use inverse trig

Directions: Solve the right triangle. Round all answers to the nearest tenth.

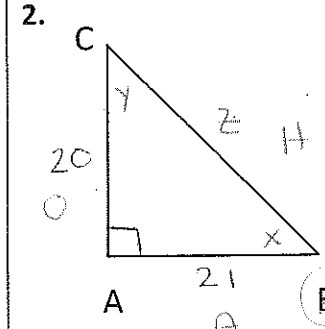
1.



$m\angle A = 90^\circ$ $\overline{AC} = 9$
 $m\angle B = 70^\circ$ $\overline{BC} = \sin(70) = \frac{9}{z}$
 $m\angle C = 20^\circ$ $\overline{AB} = \tan(70) = \frac{9}{x}$

9.6
3.3

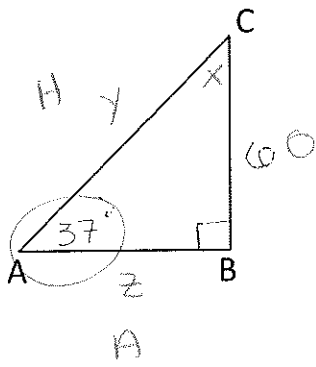
2.



$m\angle A = 90^\circ$ $\overline{AC} = 20$
 $m\angle B = 43.6^\circ$ $\overline{BC} = \cos 43.6 = \frac{21}{z}$
 $m\angle C = 46.4^\circ$ $\overline{AB} = 21$

29
21

3.



$$m\angle A = 37^\circ$$

$$m\angle B = 90^\circ$$

$$m\angle C = 53^\circ$$

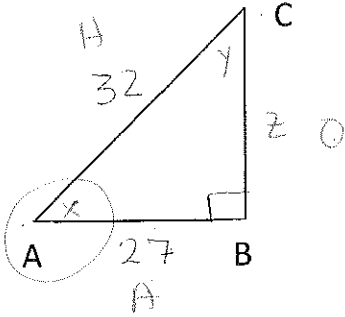
$$\overline{AC} = \sin 37 = \frac{6}{x}$$

$$\overline{BC} = 6$$

$$\overline{AB} = \tan 37 = \frac{6}{x}$$

$$8$$

4.



$$m\angle A = \cos X = \frac{27}{32}$$

$$m\angle B = 90^\circ$$

$$m\angle C = 57.5^\circ$$

$$\overline{AC} = 32$$

$$\overline{BC} = \tan 32.5 = \frac{x}{27}$$

$$17.2$$

$$\overline{AB} = 27$$

Sin Cos Tan

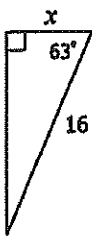
Name: _____

Unit 8: Right Triangles & Trigonometry

Date: _____ Bell: _____

Homework 4: Trigonometry:
Finding Sides and Angles**** This is a 2-page document! ******Directions:** Solve for x . Round to the nearest tenth.

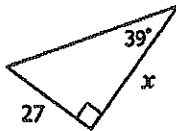
1.



$$\cos 63 = \frac{x}{16}$$

$$x = 7.3$$

2.

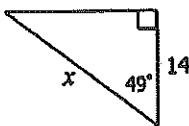


$$\tan 39 = \frac{27}{x}$$

$$x = \frac{27}{\tan 39}$$

$$x = 33.3$$

3.

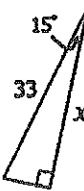


$$\cos 49 = \frac{14}{x}$$

$$x = \frac{14}{\cos 49}$$

$$x = 21.3$$

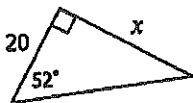
4.



$$\cos 15 = \frac{x}{33}$$

$$x = 31.9$$

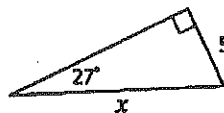
5.



$$\tan 52 = \frac{x}{20}$$

$$x = 25.6$$

6.

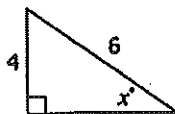


$$\sin 27 = \frac{5}{x}$$

$$x = \frac{5}{\sin 27}$$

$$x = 11$$

7.

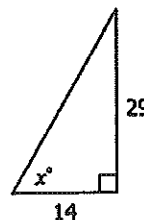


$$\sin x = \frac{4}{6}$$

$$x = \sin^{-1}(4/6)$$

$$x = 41.8^\circ$$

8.

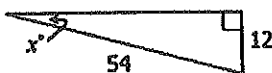


$$\tan x = \frac{29}{14}$$

$$x = \tan^{-1}(29/14)$$

$$x = 64.2^\circ$$

9.

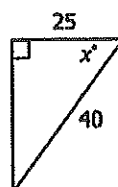


$$\sin x = \frac{12}{54}$$

$$x = \sin^{-1}(12/54)$$

$$x = 12.8^\circ$$

10.

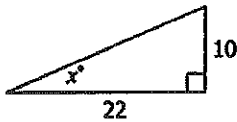


$$\cos x = \frac{25}{40}$$

$$x = \cos^{-1}(25/40)$$

$$x = 51.3^\circ$$

11.

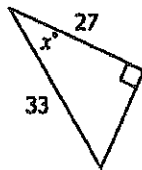


$$\tan x = \frac{10}{22}$$

$$x = \tan^{-1}(10/22)$$

$$x = 24.4^\circ$$

12.

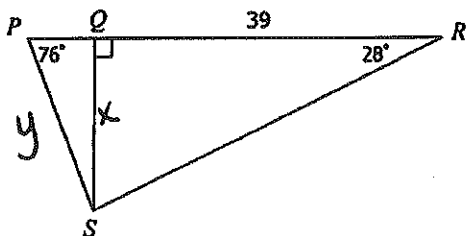


$$\cos x = \frac{27}{33}$$

$$x = \cos^{-1}(27/33)$$

$$x = 35.1^\circ$$

13. Find PS.



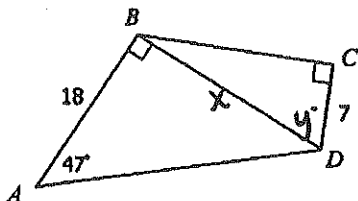
$$\tan 28 = \frac{x}{39}$$

$$x = 20.7$$

$$\frac{\sin 76 = \frac{20.7}{y}}$$

$$y = \frac{20.7}{\sin 76}$$

$$PS = 21.3$$

14. Find $m\angle CDB$.

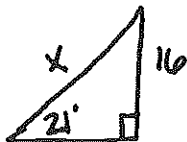
$$\tan 47 = \frac{x}{18}$$

$$x = 19.3$$

$$\cos y = \frac{7}{19.3}$$

$$y = \cos^{-1}(7/19.3)$$

$$m\angle CDB = 68.7^\circ$$

15. Max built a skateboarding ramp that is 16 inches high. The angle formed by the ramp and the ground is 21° . What is the length of the ramp?

$$\sin 21 = \frac{16}{x}$$

$$x = \frac{16}{\sin 21}$$

$$x = 44.6 \text{ in}$$

16. A fireman leaned a 36 foot ladder against a building. If he placed the ladder 7 feet from the base of the building, what angle is formed between the ladder and the ground?



$$\cos x = \frac{7}{36}$$

$$x = \cos^{-1}(7/36)$$

$$x = 78.8^\circ$$