

# unit 5 Test Review

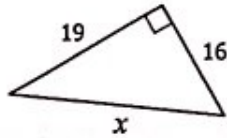
Name: KEY

Date: \_\_\_\_\_ Per: \_\_\_\_\_

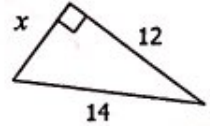
## Pythagorean Theorem & Special Right Triangles

Directions: Solve for  $x$ . Round your answer to the nearest tenth.

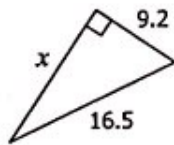
1.  $x = \underline{24.8}$



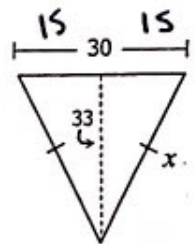
2.  $x = \underline{7.2}$



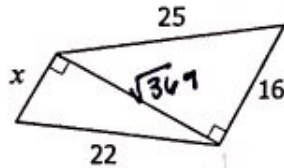
3.  $x = \underline{13.7}$



4.  $x = \underline{36.2}$

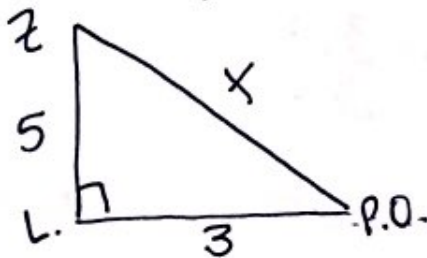


5.  $x = \underline{10.7}$



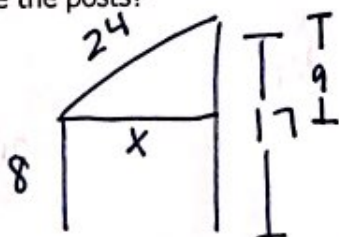
6. In Fayetteville, the library is 3 miles due west of the post office and the zoo is 5 miles due north of the library. What is the distance from the post office to the zoo?

6.  $\underline{5.8 \text{ miles}}$



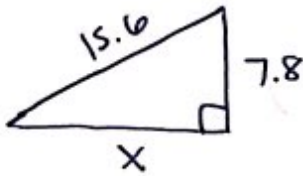
7. Two vertical posts stand side by side. One post is 8 feet tall while the other is 17 feet tall. If a 24 foot wire is stretched between the tops of the posts, how far apart are the posts?

7.  $\underline{22.2 \text{ ft.}}$



8. A 15.6 inch laptop is featured in a sales ad for \$799. This distance is the diagonal distance across the screen. If the screen measures 7.8 inches in height, what is the width of the screen?

8. 13.5 in.



**Directions:** Given the side lengths, determine whether the triangle is acute, right, obtuse, or not a triangle.

~~9.~~ 15, 17, 21

- Not a  $\Delta$
- Acute
- Right
- Obtuse

~~10.~~ 6, 12, 19

- Not a  $\Delta$
- Acute
- Right
- Obtuse

~~11.~~ 3, 9, 10

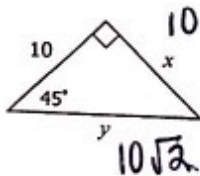
- Not a  $\Delta$
- Acute
- Right
- Obtuse

~~12.~~ 21, 28, 35

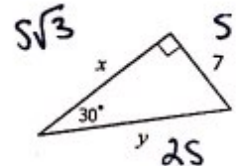
- Not a  $\Delta$
- Acute
- Right
- Obtuse

**Directions:** Find the value of each variable.

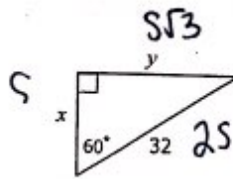
13.  $x = \frac{10}{10\sqrt{2}}$   
 $y = \frac{10\sqrt{2}}{10\sqrt{2}}$



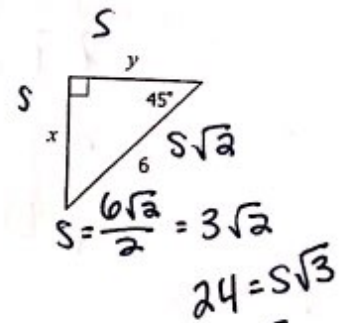
14.  $x = \frac{7\sqrt{3}}{14}$   
 $y = \frac{14}{14}$



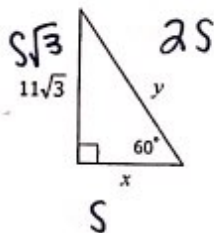
15.  $x = \frac{16}{16\sqrt{3}}$   
 $y = \frac{16\sqrt{3}}{16\sqrt{3}}$



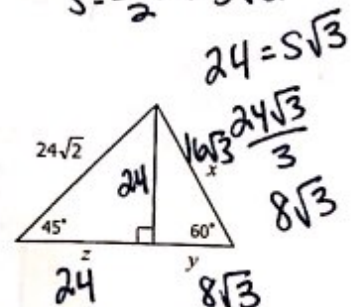
16.  $x = \frac{3\sqrt{2}}{3\sqrt{2}}$   
 $y = \frac{3\sqrt{2}}{3\sqrt{2}}$



17.  $x = \frac{11}{22}$   
 $y = \frac{22}{22}$



18.  $x = \frac{16\sqrt{3}}{8\sqrt{3}}$   
 $y = \frac{8\sqrt{3}}{8\sqrt{3}}$   
 $z = \frac{24}{24}$



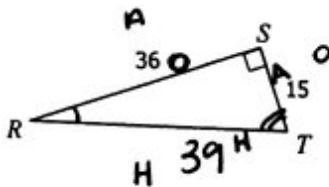
Group Members: \_\_\_\_\_

Block: \_\_\_\_\_

## Trigonometry Review

**Directions:** Work together to complete each problem. Do not divide up the work! Each person should be participating. At the end of the block, one person's paper will be chosen at random to be graded for the group.

### I. Trigonometric Ratios: Find each trig ratio. Give your answer as a fraction in simplest form.



1.  $\sin R = \frac{15}{39} = \frac{5}{13}$

4.  $\sin T = \frac{36}{39} = \frac{12}{13}$

2.  $\cos R = \frac{36}{39} = \frac{12}{13}$

5.  $\cos T = \frac{15}{39} = \frac{5}{13}$

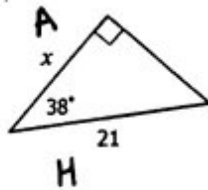
3.  $\tan R = \frac{15}{36} = \frac{5}{12}$

6.  $\tan T = \frac{36}{15} = \frac{12}{5}$

### II. Finding Sides and Angles: Find the value of $x$ . Round your answer to the nearest tenth.

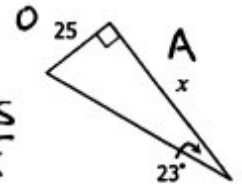
7.  $x = \underline{16.5}$

$\cos(38) = \frac{x}{21}$



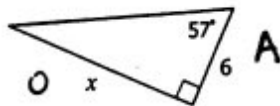
8.  $x = \underline{58.9}$

$\tan(23) = \frac{25}{x}$



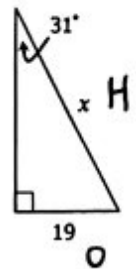
9.  $x = \underline{9.2}$

$\tan(57) = \frac{x}{6}$



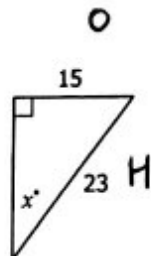
10.  $x = \underline{36.9}$

$\sin(31) = \frac{19}{x}$



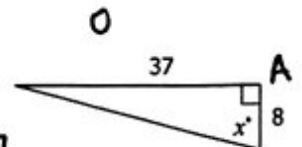
11.  $x = \underline{40.7^\circ}$

$\sin(x) = \frac{15}{23}$



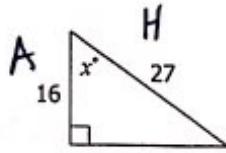
12.  $x = \underline{77.8^\circ}$

$\tan(x) = \frac{37}{8}$



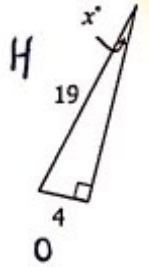
13.  $x = 53.7^\circ$

$$\cos(x) = \frac{16}{27}$$



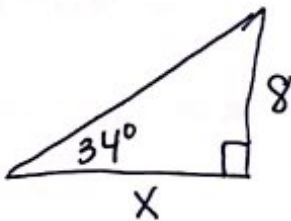
14.  $x = 12.2^\circ$

$$\sin(x) = \frac{4}{19}$$



**III. Applications:** Draw a picture for each problem, then solve for the missing part.

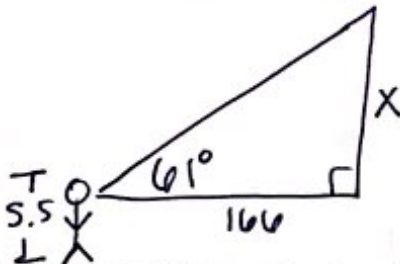
15. The angle of elevation from a soccer ball on the ground to the top of the goal is  $34^\circ$ . If the goal is 8 feet tall, what is the distance from the ball to the goal?



$$\tan(34) = \frac{8}{x}$$

$$x = 11.9 \text{ ft.}$$

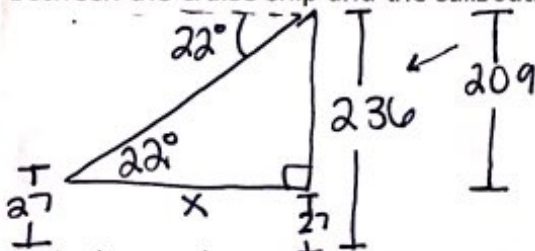
16. Sarah sights the top of the Statue of Liberty at an angle of elevation of  $61^\circ$ . If Sarah is 5.5 feet tall and is standing 166 feet from the base of the statue, find its height.



$$\tan(61) = \frac{x}{166}$$

$$x = 299.47 + 5.5 \Rightarrow 305 \text{ ft.}$$

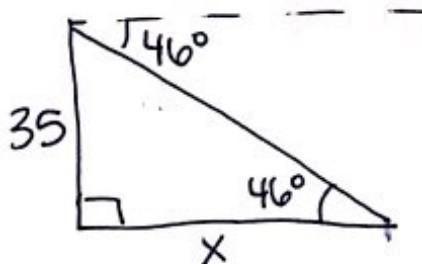
17. The angle of depression from the top of a cruise ship to the top of a sailboat is  $22^\circ$ . Sitting above water, the cruise ship is 236 feet tall while the sailboat is 27 feet tall. Find the distance between the cruise ship and the sailboat.



$$\tan(22) = \frac{209}{x}$$

$$x = 517.3 \text{ ft.}$$

18. A spectator in the stands spots the team mascot on the field at an angle of depression of  $46^\circ$ . If the spectator is sitting 35 feet above the ground, what is the horizontal distance between the spectator and the mascot?

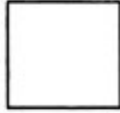


$$\tan(46) = \frac{35}{x}$$

$$x = 33.8 \text{ ft.}$$

Name: \_\_\_\_\_

Unit 8: Right Triangles & Trigonometry

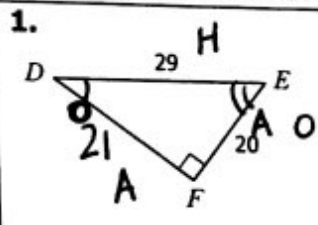


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Homework 5: Trigonometry Review

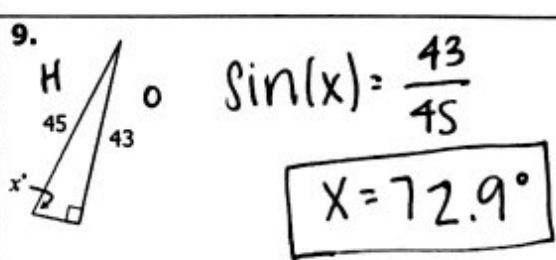
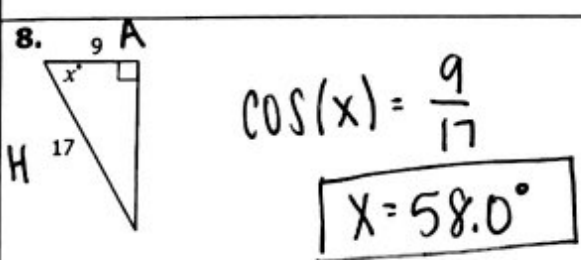
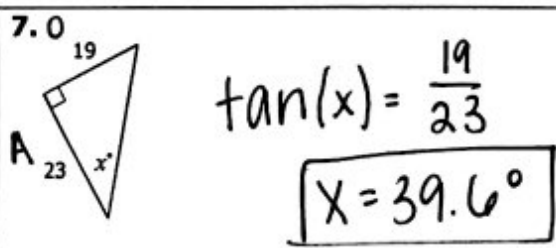
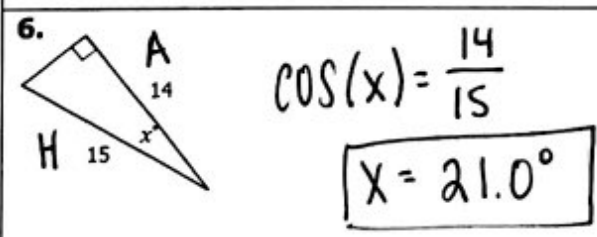
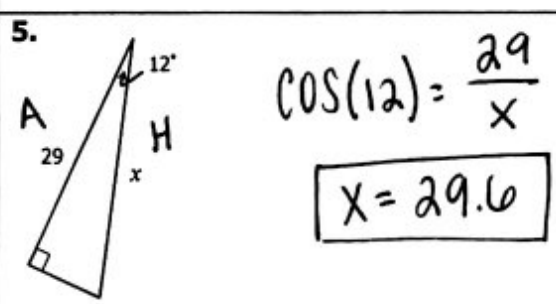
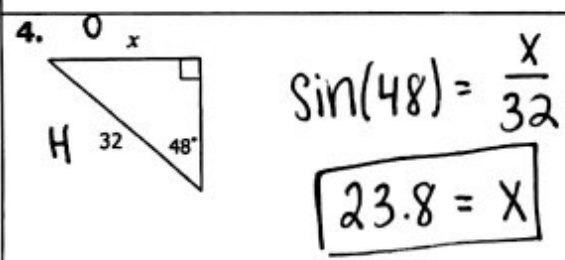
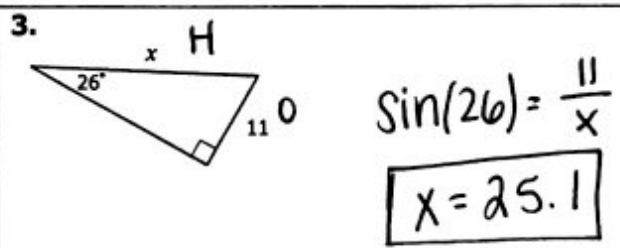
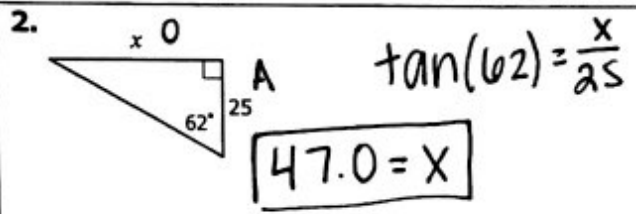
**\*\* This is a 2-page document! \*\***

**Directions:** Give each trig ratio as a fraction in simplest form.

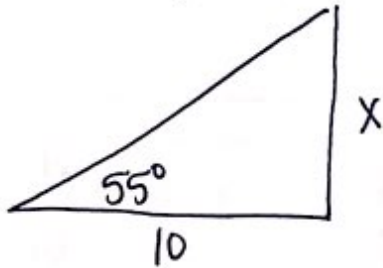


- $\sin D = \frac{20}{29} = \underline{\hspace{2cm}}$
- $\sin E = \frac{21}{29} = \underline{\hspace{2cm}}$
- $\cos D = \frac{21}{29} = \underline{\hspace{2cm}}$
- $\cos E = \frac{20}{29} = \underline{\hspace{2cm}}$
- $\tan D = \frac{20}{21} = \underline{\hspace{2cm}}$
- $\tan E = \frac{21}{20} = \underline{\hspace{2cm}}$

**Directions:** Solve for x. Round to the nearest tenth.



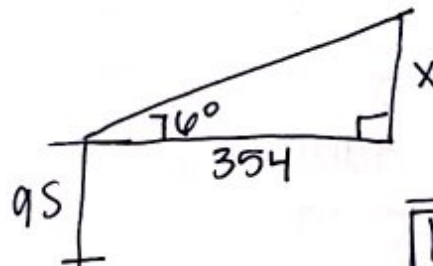
10. Jada is standing 10 feet from the base of tree and spots a nest sitting on a branch. The angle of elevation from the ground where she is standing to the nest is  $55^\circ$ . Find the height of the nest.



$$\tan(55) = \frac{X}{10}$$

$$\boxed{14.3 \text{ ft} = X}$$

11. The angle of elevation from the top of a 95 foot tall building to a hot air balloon in the sky is  $76^\circ$ . If the horizontal distance between the building and the hot air balloon is 354 feet, find the height of the hot air balloon.

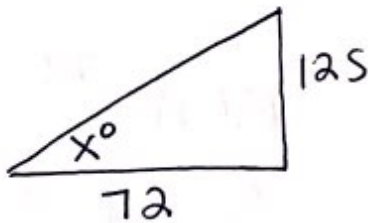


$$\tan(76) = \frac{X}{354}$$

$$1419.8 = X + 95$$

$$\boxed{1514.8 \text{ ft.}}$$

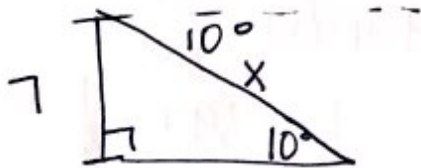
12. A fire hydrant sits 72 feet from the base of a 125 foot tall building. Find the angle of elevation from the fire hydrant to the top of the building.



$$\tan(x) = \frac{125}{72}$$

$$\boxed{X = 60.1^\circ}$$

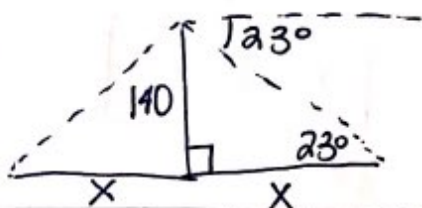
13. A surfer is riding a 7 foot wave. The angle of depression from the surfer to the shoreline is  $10^\circ$ . What is the distance from the surfer to the shoreline?



$$\sin(10) = \frac{7}{X}$$

$$\boxed{X = 40.3 \text{ ft.}}$$

14. A cell phone tower is anchored by two cables on each side for support. The cables stretch from the top of the tower to the ground, with each being equidistant from the base of the tower. The angle of depression from the top of the tower to the point in which the cable reaches the ground is  $23^\circ$ . If the tower is 140 feet tall, find the ground distance between the cables.



$$\tan(23) = \frac{140}{X}$$

$$X = 329.8$$

$$\times 2$$

$$\boxed{659.6 \text{ ft.}}$$