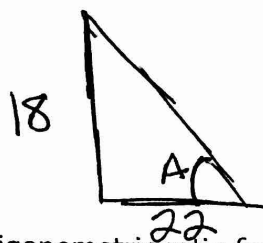


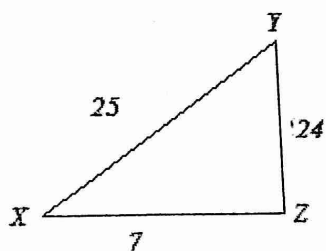
Trigonometry
Unit 6 Triangles Review

Name _____
Hour _____

1. Tabitha is trying to get her cat out of a tree. The cat is 18 feet above her throwing arm and she's standing 22 feet from the tree. If she could throw a ball in a straight line, at what angle would she throw it in order to hit the cat (very gently, of course! 😊) and scare him down?

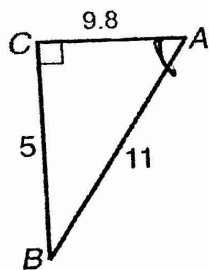


2. Write the trigonometric ratio for $\cos X$ as a fraction and as a decimal rounded to the nearest hundredth.



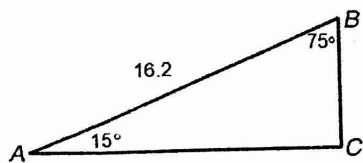
$$\cos X = \frac{7}{25}$$

3. Find $\sin A$.



$$\sin A = \frac{5}{11}$$

4. Which expression can be used to find BC ?



(A) $16.2(\sin 15^\circ)$

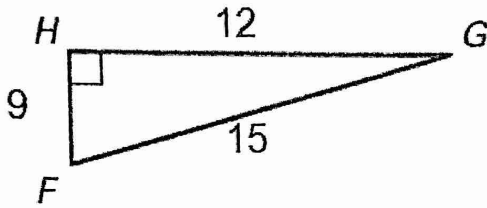
C) $16.2(\sin 75^\circ)$

B) $16.2(\cos 15^\circ)$

D) $16.2(\tan 15^\circ)$

$$\sin 15 = \frac{BC}{16.2}$$

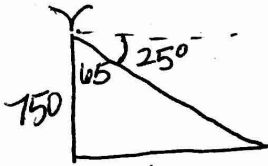
5. Find $\cos F$ and $\tan G$.



$$\cos F = \frac{9}{15}$$

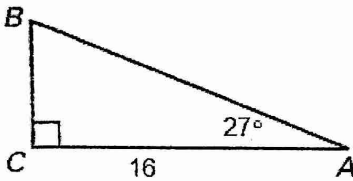
$$\tan G = \frac{9}{12}$$

6. An eagle 750 feet in the air spots its prey on the ground. The angle of depression to its prey is 25° . What is the **horizontal** distance between the eagle and its prey? Round to the nearest foot.



$$\tan 65 = \frac{x}{750}$$

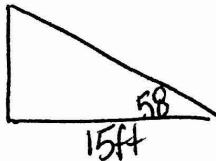
7. Solve $\triangle ABC$.



$$180 - 90 - 27 = B$$

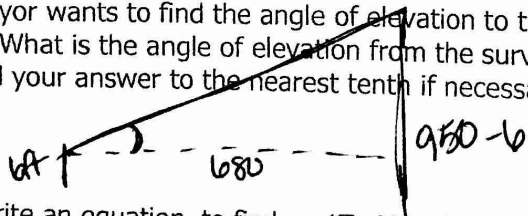
$$\tan 27 = \frac{BC}{16}$$

8. The angle of elevation from the tip of a flagpole's shadow to the top of the flagpole is 58° . The length of the shadow is about 15 feet. How tall is the flagpole to the nearest tenth of a foot?



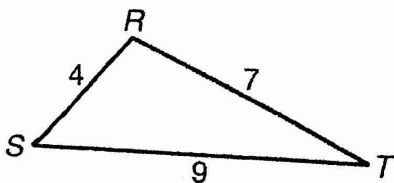
$$\tan 58 = \frac{PP}{15}$$

9. A 6 foot tall surveyor is 680 feet from the base of a mountain. The height of the mountain is 950 feet. The surveyor wants to find the angle of elevation to the top of the hill. Sketch a picture to represent the situation. What is the angle of elevation from the surveyor's eye level to the top of the hill? Show your work, and round your answer to the nearest tenth if necessary.



$$\tan \theta = \frac{944}{680}$$

10. Write an equation to find $m\angle T$. You do not have to solve this equation.



$$4^2 = 7^2 + 9^2 - 2(7)(9)\cos T$$

1. State how many different triangles can be made in each situation below.

a) $a = 20, c = 16, m\angle A = 30^\circ$

One

b) $a = 7, c = 16, m\angle A = 30^\circ$

~~2 triangles~~ none

c) $a = 10, c = 16, m\angle A = 30^\circ$

two

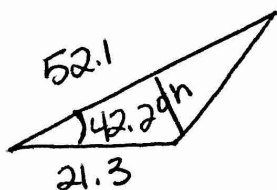
12. Solve $\triangle ABC$ with $A = 42^\circ, a = 8.2, b = 4$.

Law of Sines

13. Solve $\triangle ABC$ $a = 4.2, b = 5.4, c = 2.1$

Law of Cosines

14. A real estate agent wants to find the area of a triangular lot. A surveyor takes measurements and finds that two sides are 52.1m and 21.3m, and the angle between them is 42.2° . What is the area of the triangular lot?



~~$b = 21.3$~~

$\sin 42.2 = \frac{h}{52.1}$

15. The lengths of the diagonals of a parallelogram are 30 meters and 40 meters. Find the lengths of the sides of a parallelogram if the diagonals intersect at an angle of 34° .

