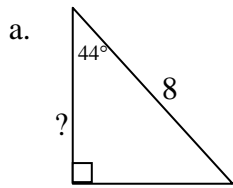
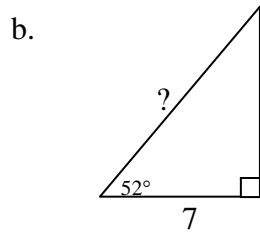


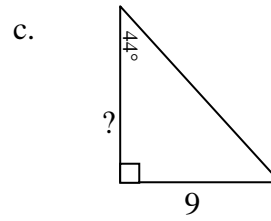
Sec 2-1 CC Geometry – Trigonometry Practice

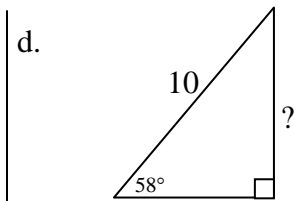
Name: _____

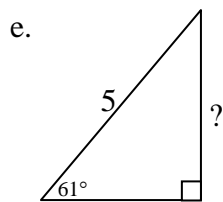
1. Find the requested unknown side of the following triangles.

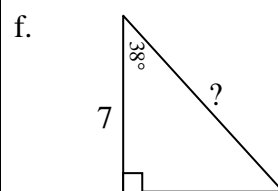


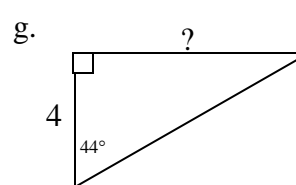


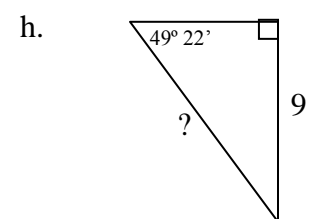










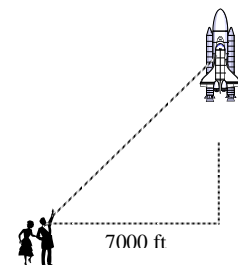


2. An observer is standing 7000 feet from the launch pad of the Space Shuttle Discovery. The Shuttle launches and 30 seconds later the observer sites the shuttle with an angle of elevation of 78° .

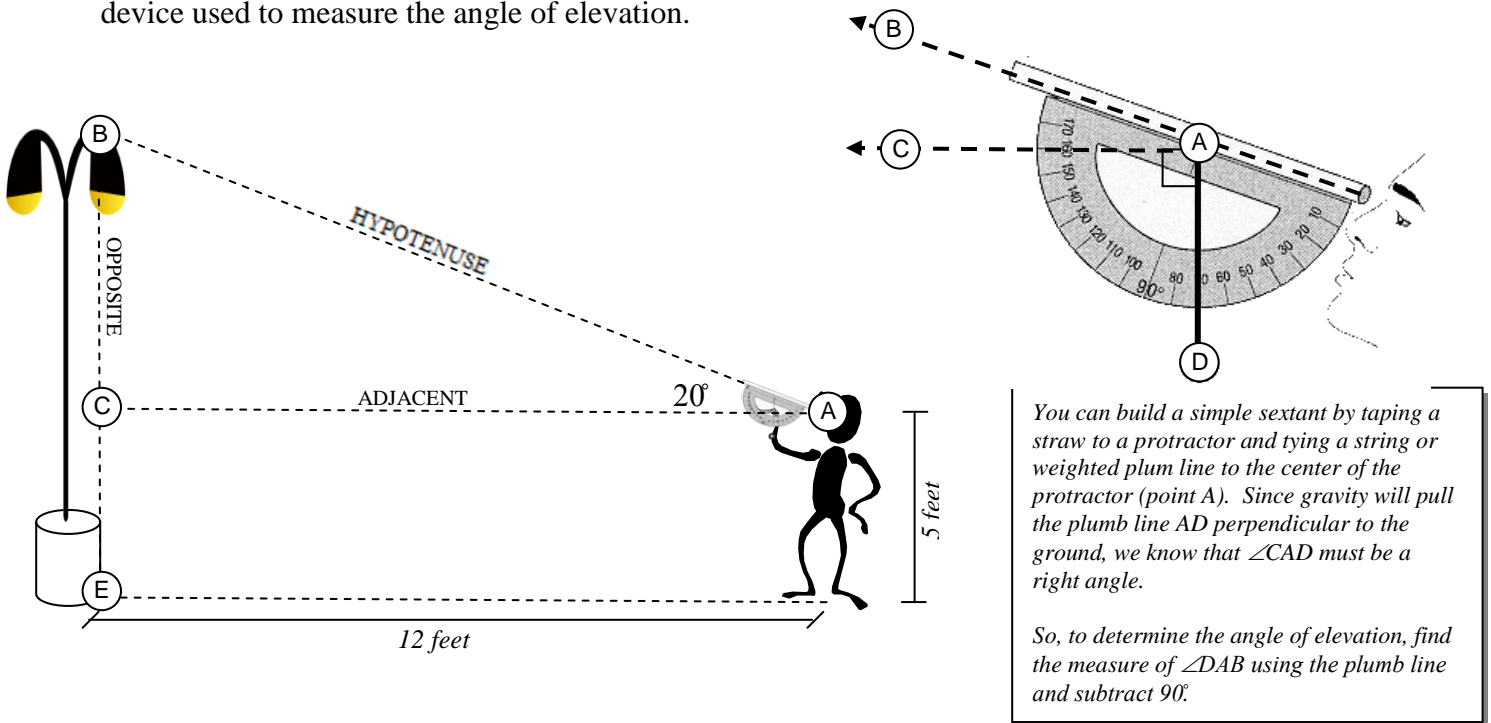
a. How high is the space shuttle?

b. How fast is the space shuttle moving in feet per second?

(Can you find the speed in miles per hour, remember there are 5280 feet in 1 mile.)



3. Trigonometric ratios can be used to solve right triangles. They are commonly used to find measures of objects that might be inaccessible. For example, to determine the height of a light pole in the school parking lot we can use a simple **sextant** and trigonometry. A simple sextant is a device used to measure the angle of elevation.



In this example, **we know** that the length of the ADJACENT and **would like to determine** the length of the OPPOSITE. The trigonometric ratio that relates these two sides of the triangle is **TANGENT**.

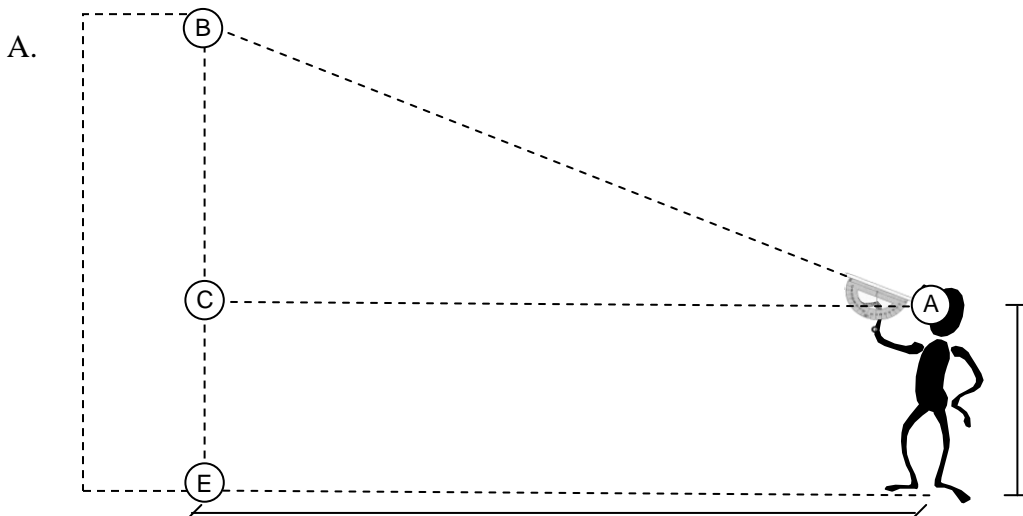
$$\tan(20^\circ) = \frac{Opp.}{12}$$

$$12 \cdot \tan(20^\circ) = \frac{Opp.}{12} \cdot 12$$

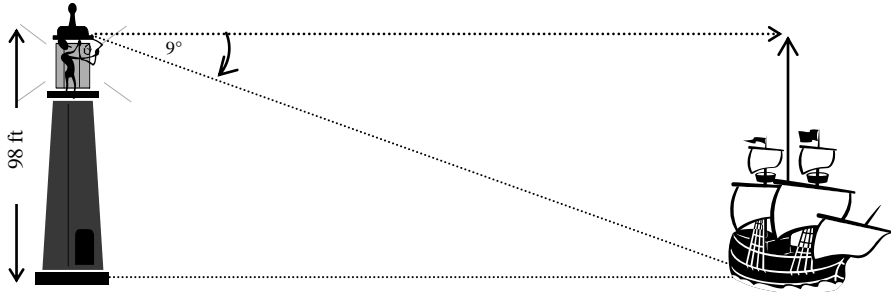
$$4.37 \text{ ft} \approx Opp.$$

$$AE \approx 4.37 \text{ ft} + 5 \text{ ft} = 9.37 \text{ ft}$$

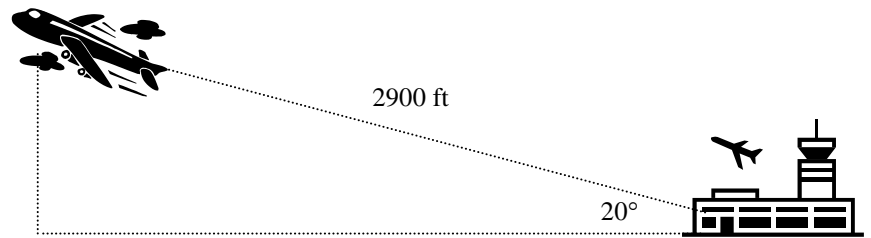
Using a similar strategy find the height of some objects that are too tall to measure at your school. (Measure a horizontal distance of at least 12 feet away from the object.)



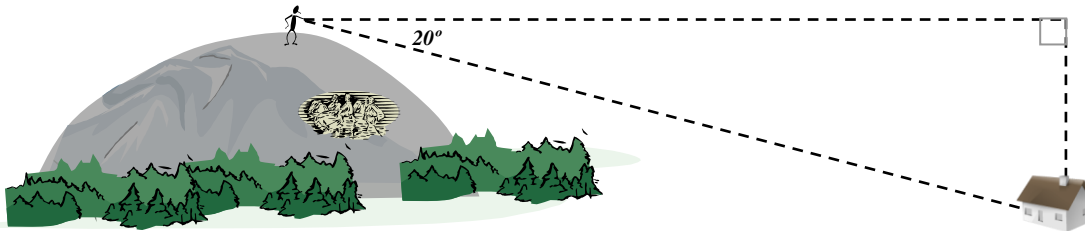
4. A ship has been sighted from a lighthouse. The observer is 98 feet above the ground (sea level) when he sighted the ship and at 9° angle of depression. Determine how far the ship is away from the lighthouse.



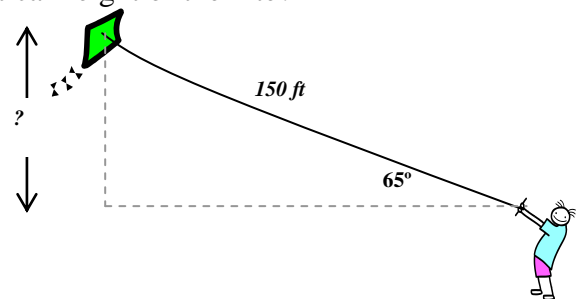
5. As a plane takes off it ascends at a 20° angle of elevation. If the plane has been traveling at an average rate of 290 ft/s and continues to ascend at the same angle, then how high is the plane after 10 seconds (the plane has traveled 2900 ft).



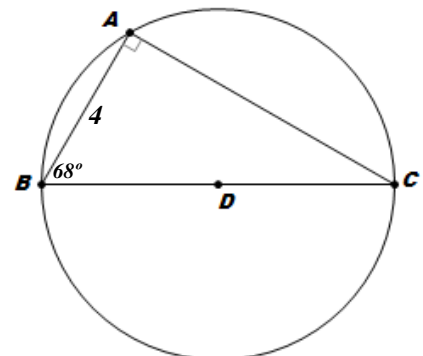
6. Mr. GIRT noticed that he could spot his house from the top of Stone Mountain. If Mr. GIRT noticed that he had to use a 20° angle of depression to spot his house and that Stone Mountain is 825 feet above its surroundings then how far is Stone Mountain away from his house?



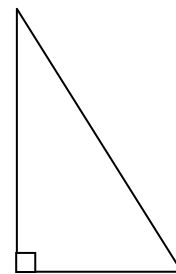
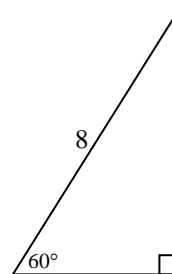
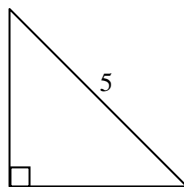
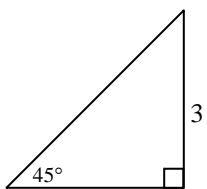
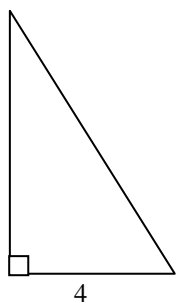
7. A kid is flying a kite and has reeled out his entire line of 150 ft of string. If the angle of elevation of the string is 65° then which expression gives the vertical height of the kite?



8. $\triangle ABC$ is a right triangle and BC is a diameter of the circle centered at point D . If $AB = 4$ cm, and $m\angle ABC = 68^\circ$, find the circumference of the circle.



9. Find the unknown sides without using trigonometry but with special right triangles.



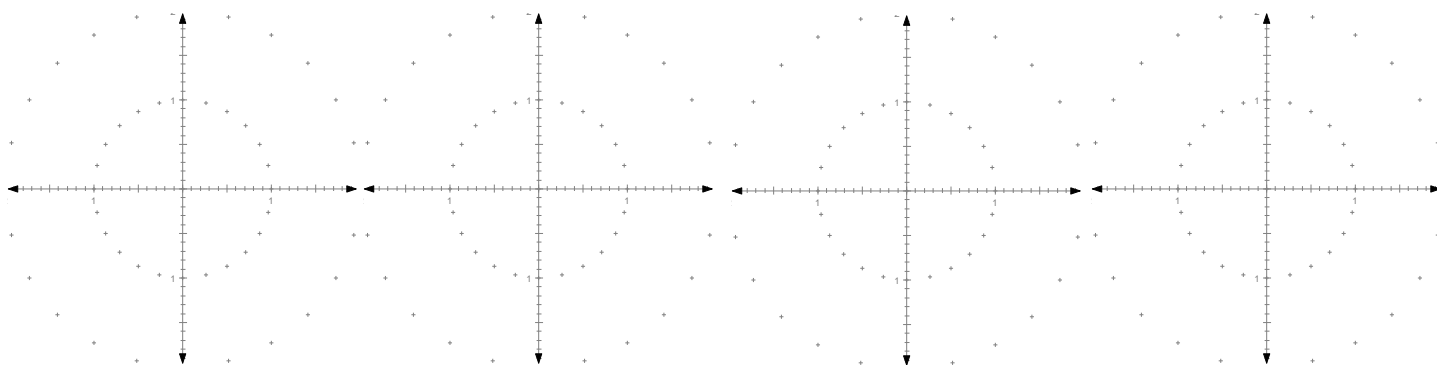
10. Find the reference angle for each and use the special right triangles to determine the EXACT value of the following.

a. $\sin(45^\circ) =$

b. $\sin(120^\circ) =$

c. $\cos(225^\circ) =$

d. $\cos(300^\circ) =$

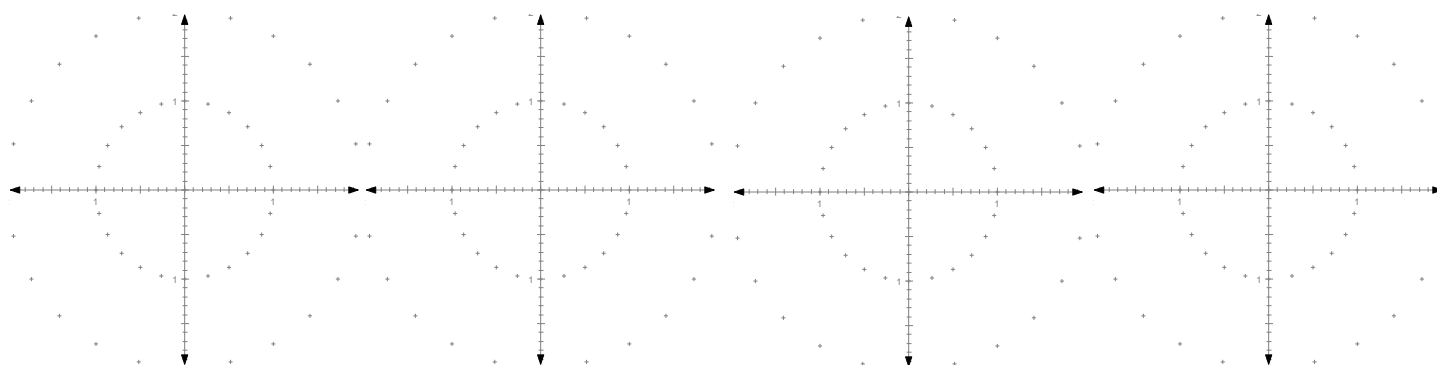


e. $\tan(330^\circ) =$

f. $\sin(405^\circ) =$

g. $\cos(480^\circ) =$

h. $\sin(180^\circ) =$

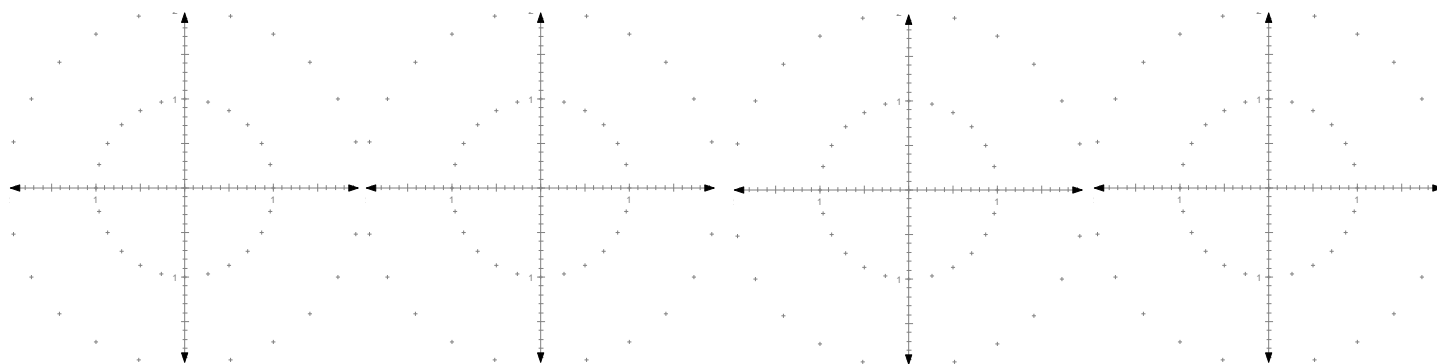


g. $\csc(330^\circ) =$

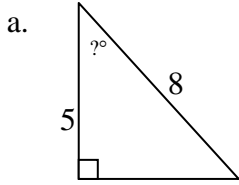
h. $\sec(225^\circ) =$

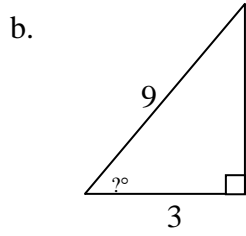
i. $\cot(840^\circ) =$

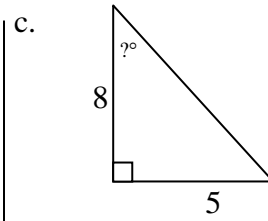
j. $\cos(-450^\circ) =$

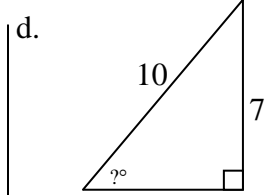


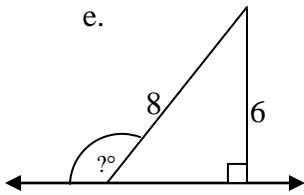
11. Find the requested unknown angles of the following triangles using a calculator.

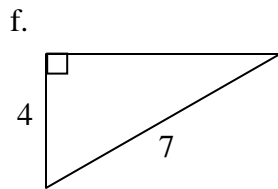


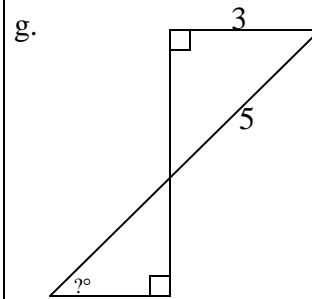


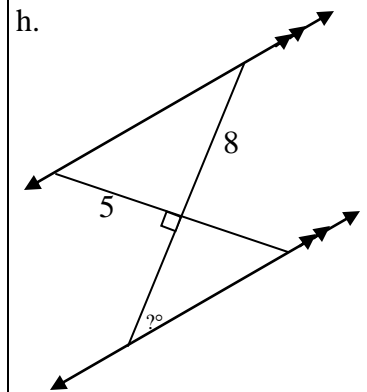












12. Angle Puzzle.

