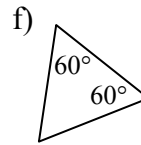
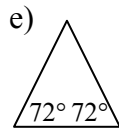
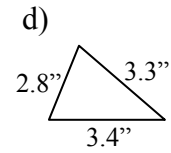
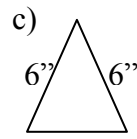
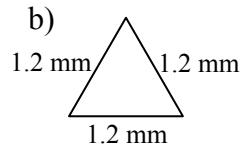
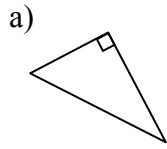


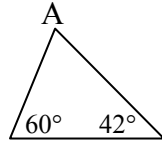
Trigonometry  
 Quiz 1 – Triangle Properties and Geometry Review

Directions: Unless otherwise indicated, round all answers to the nearest tenth.

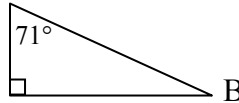
1) Classify each triangle as **scalene**, **isosceles**, **equilateral** or **right**.



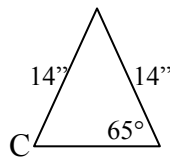
2) Determine the size of angle A.



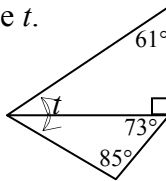
3) Determine the size of angle B.



4) Determine the size of angle C.



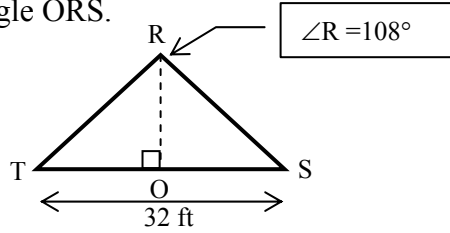
5) Determine the size of angle  $t$ .



Trigonometry  
 Quiz 1 – Triangle Properties and Geometry Review

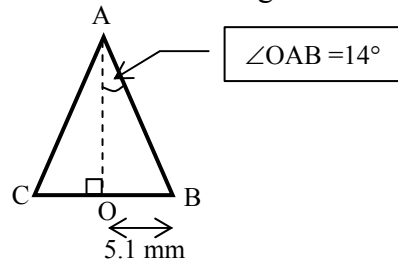
6) If an altitude is drawn in isosceles triangle RST from vertex R to point O on side TS, determine the length of OS and measure of angle ORS.

OS: \_\_\_\_\_  
 $\angle SRO$ : \_\_\_\_\_

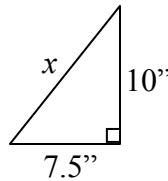


7) An altitude AO is drawn in isosceles triangle ABC. Dimension OB is 5.1 mm and angle OAB is  $14^\circ$ . Determine the length of BC and the measure of vertex angle A.

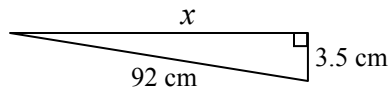
BC: \_\_\_\_\_  
 $\angle A$ : \_\_\_\_\_



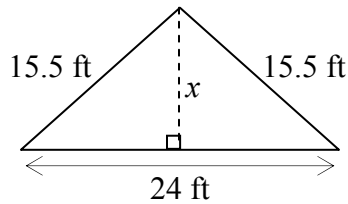
8) Compute the length of dimension  $x$ .



9) Compute the length of dimension  $x$ .



10) Compute the length of dimension  $x$ .

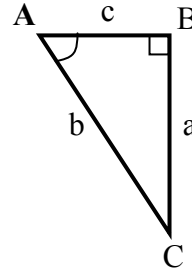


Trigonometry  
Quiz 2 – Right Triangle Trigonometry

Directions: Unless otherwise indicated, round all answers to the nearest tenth.

1) In triangle ABC, if  $\angle A$  is the reference angle:

- Side \_\_\_\_\_ is the hypotenuse.  
 Side \_\_\_\_\_ is the adjacent side.  
 Side \_\_\_\_\_ is the opposite side.

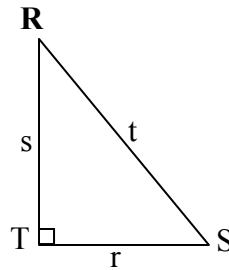


2) The sine ratio is:

- a) opp/hyp  
 b) adj/hyp  
 c) opp/adj  
 d) hyp/opp

3) Given triangle RST, write the cosine of angle R.

$\cos R = \underline{\hspace{2cm}}$



4) Evaluate problems a – i using your scientific calculator. Round your answers to four decimal places.

- |   |   |   |
|---|---|---|
| a) $\sin 4^\circ = \underline{\hspace{2cm}}$  | d) $\sin 90^\circ = \underline{\hspace{2cm}}$ | g) $\tan 5^\circ = \underline{\hspace{2cm}}$    |
| b) $\cos 12^\circ = \underline{\hspace{2cm}}$ | e) $\cos 90^\circ = \underline{\hspace{2cm}}$ | h) $\cos 14.5^\circ = \underline{\hspace{2cm}}$ |
| c) $\tan 70^\circ = \underline{\hspace{2cm}}$ | f) $\tan 90^\circ = \underline{\hspace{2cm}}$ | i) $\sin 73.2^\circ = \underline{\hspace{2cm}}$ |

5) Evaluate problems a – f using your scientific calculator. Write your answers to the nearest tenth of a degree.

- |                      |                      |                      |
|----------------------|----------------------|----------------------|
| a) $\sin A = 0.6428$ | c) $\tan A = 5.6713$ | e) $\cos A = 0.6428$ |
| b) $\cos A = 0.9336$ | d) $\tan A = 0.1763$ | f) $\sin A = 1$      |

6) A student writes this formula:  $\sin 65^\circ = \frac{x}{14}$  Which dimension is the student trying to determine?

- a) hypotenuse  
 b) reference angle  
 c) opposite side  
 d) adjacent side

Trigonometry  
Quiz 2 – Right Triangle Trigonometry

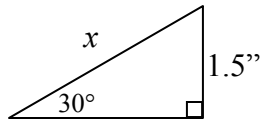
7) A student writes this formula:  $\tan 15^\circ = \frac{0.25}{x}$  Which dimension is the student trying to determine?

- a) hypotenuse
- b) reference angle
- c) opposite side
- d) adjacent side

8) Solve this formula for A:  $\tan A = \frac{1.7}{0.8}$

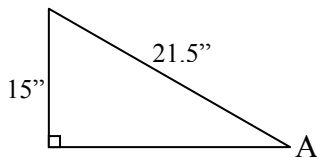
9) Solve this formula for x:  $\cos 10^\circ = \frac{3.2}{x}$

10) Given this situation, which trig formula (sine, cosine, or tangent) must be used to solve for x?

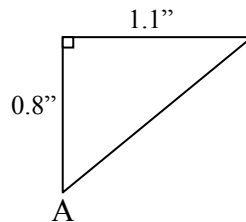


11) Solve each of the following right triangles a- h. Determine the missing dimension(s) and round them to the nearest tenth.

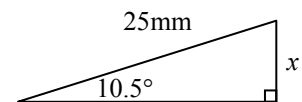
a)



b)

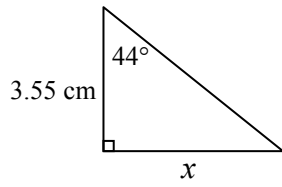


c)

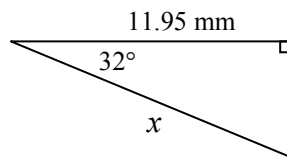


Trigonometry  
Quiz 2 – Right Triangle Trigonometry

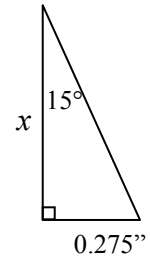
d)



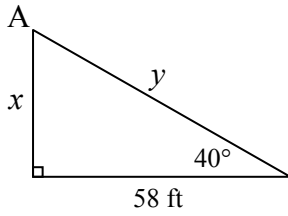
e)



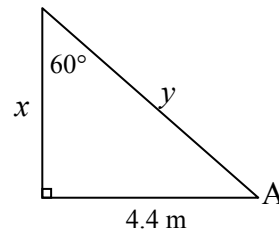
f)



g)



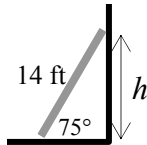
h)



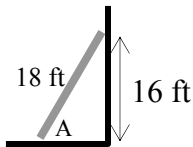
Trigonometry  
Quiz 3 –Trigonometry Applications

Directions: Unless otherwise indicated, round all answers to the nearest tenth.

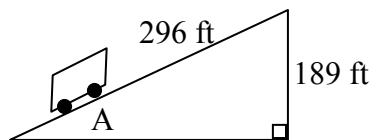
- 1) Determine the height of a tree if an observer stands 45 ft from the base and measures an angle of elevation of  $30^\circ$  when looking at the very top of the tree.
- 2) A portion of a highway has a grade of 7.5%. Convert this grade to an angle.
- 3) To determine the width of a river, a surveyor marks a position directly across from a tree on the edge of the opposite side of the river. He then moves downstream 80 ft from his initial position. When he looks at the tree from the new position, he notes an angle of  $15.8^\circ$ . Use this information to determine the width of the river.
- 4) A ladder is designed to be placed at an angle of  $75^\circ$  from the horizontal. If the ladder is placed against a wall at this angle, how far up the wall will the ladder reach?



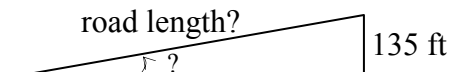
- 5) Is the angle at which this ladder is placed against a wall too steep if the manufacturer recommends a maximum angle of  $70^\circ$ ?



- 6) The Fenelon Place Elevator in Dubuque, IA runs on a set of tracks that is 296 ft long and rises 189 ft from its starting place to the top of the hill. What is the angle of the tracks?

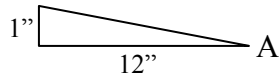


- 7) A temporary logging road is built along the side of a hill that is 135 ft high. According to local regulations the road can have a grade of no more than 8%.
  - a) Convert the 8% grade to an angle (nearest tenth of a degree).
  - b) How long will the road be if it is built to the angle determined in part a) and goes to the very top of the hill?



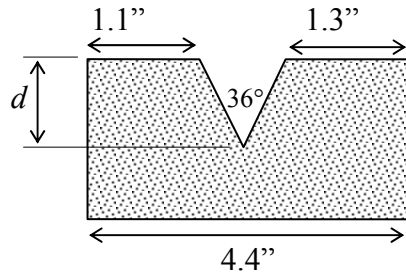
Trigonometry  
Quiz 3 –Trigonometry Applications

8) According to the ADA, a ramp meant for use by persons using a hand-powered portable wheelchair can rise 1" for every 12" of horizontal travel. See the diagram below.

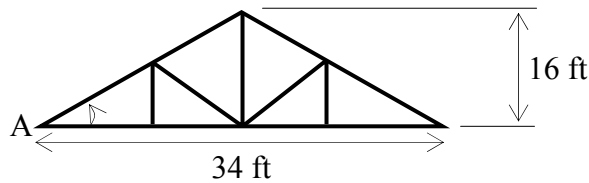


- a) What is the angle of a ramp built to those specifications?
- b) If a ramp is built using the angle found in part a) that must rise a total of 3 ft, how long will the ramp surface be?

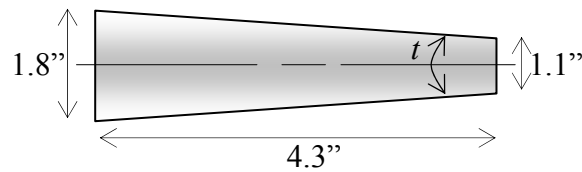
9) Determine the depth of the machined groove in this steel block.



10) Determine the angle shown on this diagram of a rafter.

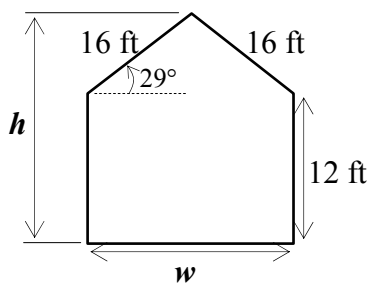


11) Compute taper angle  $t$ .

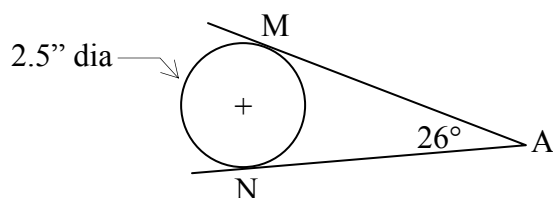


Trigonometry  
Quiz 3 – Trigonometry Applications

12) The diagram shows the end view of a house. Calculate the overall height ( $h$ ) and width ( $w$ ) of this house.



13) The 2.5 inch diameter circle shown is tangent to both sides of the  $26^\circ$  angle at points M and N. Determine distance  $NA$ .



14) Compute distance  $x$ .

