

Assignment 2
Unit 2 Right Triangle Trigonometry

Name _____

Part A: 2.1/2.2/2-3

Date Due: _____
BEFORE HOMEROOM

1 Identify the following to four decimal places. The proper format is

$\sin 57^\circ = 0.8387$

A) $\sin 34^\circ =$ _____ B) $\cos 89^\circ =$ _____

C) $\tan 55^\circ =$ _____ D) $\sin 45^\circ =$ _____

2 Find the following angles to the nearest degree. The proper format is

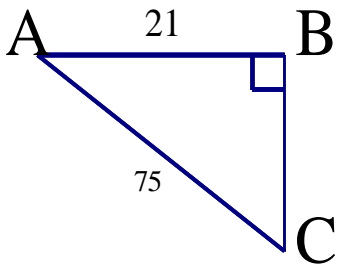
$\sin \theta = 0.5$ then
 $\theta = \sin^{-1}(0.5)$
 $\theta = 30^\circ$

A) $\sin \theta = 0.3465$ B) $\tan \theta = 1.7896$

C) $\cos \theta = 0.5$ D) $\sin \theta = 4$

3 **Explain** how you would know that the _____ without the use of a calculator. Use diagrams to back up your reasoning.

4 A Find the indicated trigonometric ratio in fractional form. Make sure all fractions are reduced. You may have to find all sides first.



Sin A =

Sin C =

Cos A =

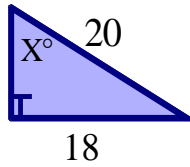
Cos C =

Tan A =

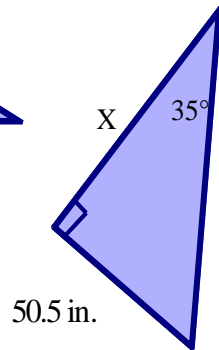
Tan C =

B Use a trigonometric ratio set up an equation and use it to find the indicated angle or side (Nearest tenth)

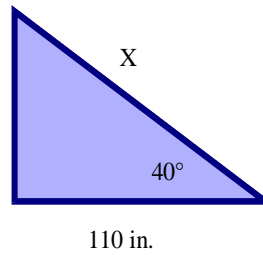
A)



B)



C)



Part B 2-2 to 2-7

In the following application problems, set up a trig equation and use it to determine the missing unknown. Diagrams are necessary in this section.

- 5 At a point 150 m from the base of the Eiffel tower, the angle of inclination of the top of the tower is 70° . How tall is the tower to the nearest metre?

- 6 The angle of inclination of a road is 22° . If you rose vertically for 30 m, determine how far you would have travelled horizontally to the nearest tenth of a metre.

- 7 A hill has a 200ft. vertical rise for every 600 ft. run horizontally. Determine the inclination of the hill to the nearest degree.

Major Applications 1 (Angles of depression, elevation)

- 8 A disabled ship is sighted from the top of a cliff that is 150m high. The angle of depression is determined to be 6° . Draw a diagram to indicate this situation and use it to find all distances: i.e. the distance from the top of the cliff to the disabled ship and the distance the ship is away from the base of the cliff. Round both answers to two decimal places.
- 9 The angle of elevation from a spot on the ground to the top of a tower is 3.5° . If the base of the tower is 900 m away from the location on the ground, determine the height of the tower and the distance to the top of the tower from the location on the ground.
- 10 A weather balloon is at a vertical height of 800 m. If the direct distance from a viewing deck to the balloon is 1200m, determine the measure of the angle of elevation to the top of the balloon to the nearest degree. What is the measure of the angle of depression?

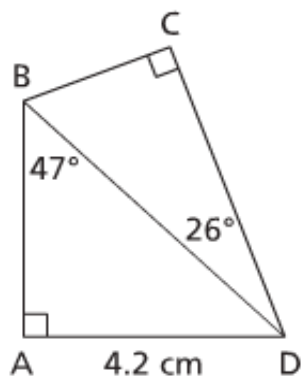
Applications 2: Solving a Right Triangle

- 11 In Triangle GHK, $g = 50.5$ cm, $\angle G = 90^\circ$, and $k = 40.8$ cm. Solve the triangle with all sides to the nearest tenth and all angles to the nearest degree.

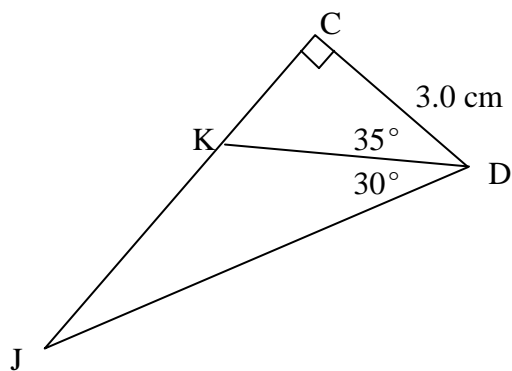
- 12 In triangle FGT, $\angle F = 90^\circ$, $f = 900$ m, and $g = 800$ m. Solve the triangle with all sides to the nearest tenth and all angles to the nearest tenth.

Applications 3: Working with two or more triangles.

- 13 In the indicated triangle below, find the measure of CD to the nearest cm.



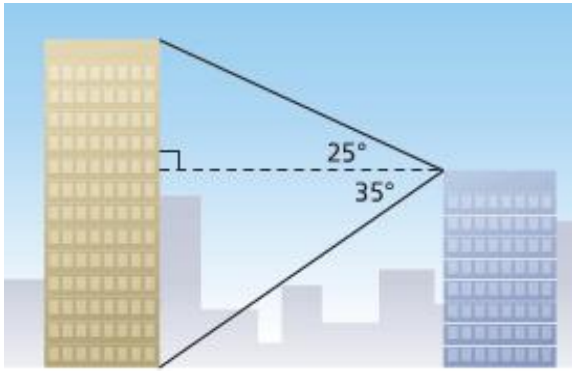
- 14 Determine the length of JK below to one decimal place.



- 15 From the top of a lighthouse, a tourist sites a fishing trawler and a sail boat in direct line with their line of sight. The tower is 15 yds. high. It is determined the angle of depression to the fishing boat is 12° and the angle of depression to the sail boat is 5° . Draw a diagram to represent this situation and use it to determine the distance the boats are apart to the nearest tenth of a mile.

16 Two office towers are 800 m apart. F

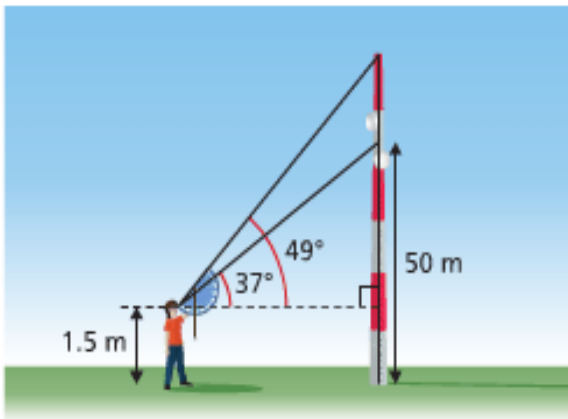
. Determine the height of each tower to the nearest metre.



17 A student uses a clinome

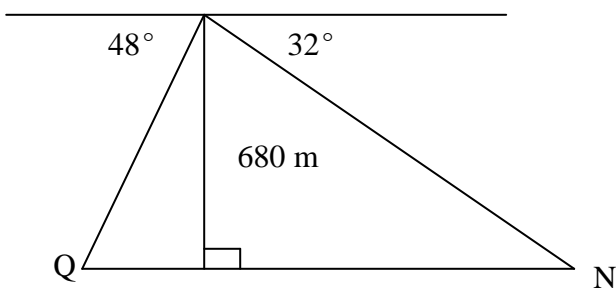
while the

student holds the clinometer 1.5 m above the ground. She then measures the angle of elevation of the top of . Determine the height of the tower to the nearest tenth of a metre.



8

. How long would a tunnel be that runs between the two points Q and N? Give your answer to the nearest metre.



Application 4: 3-D Trigonometry

- 19
- What is the length of the body diagonal in this rectangular prism?
 - What is the measure of $\angle AFH$, the angle between the body diagonal and a diagonal of the base of the prism?
- Give the measures to the nearest tenth.

