

WS 10-2-6 "SOLVING PROBLEMS WITH MULTIPLE RIGHT TRIANGLES"

TRIGONOMETRY UNIT

Name: _____ Block: _____ Date: _____

1. Two towers are 60 m apart. From a point halfway between the towers, the angles of elevation of the tops of the towers are measured. Find the height of each tower to the nearest metre, if the angle of elevation of the tower on the right is 18° and the angle of elevation of the tower on the left is 24° .
2. A pyramid has 4 congruent triangular faces, with the base of each face being 4.5 m and the slant height of the pyramid being 6.2 m. Find the measure of each of the three angles in the triangular face to the nearest tenth of a degree.
3. From a window in the school, a student measured the angle of elevation of the top of a flagpole as 28° and angle of depression of the base as 40° . The student knows she made the measurements from 16 ft. above the ground.
 - a. Find the horizontal distance between the student and the flagpole to the nearest ft.
 - b. Find the height of the flagpole to the nearest ft.
4. A rectangle has dimension 4.5cm by 3.1 cm. Determine the measures of the angles at the point where the diagonals intersect.

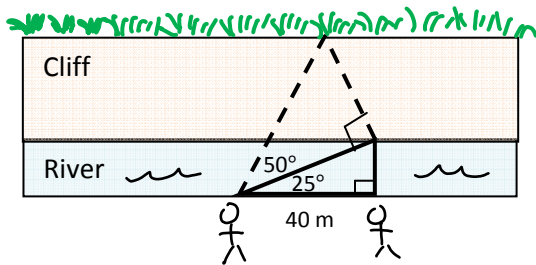
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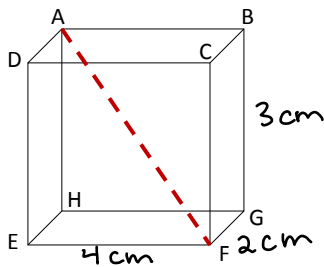
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5. From a point due south of a 26 m tall observation tower, John measures the angle of elevation of the top of the tower as 57° . His brother Sam is standing due east of the tower and measures the angle of elevation of the top of the tower as 62° . Determine how far apart John and Sam are standing to the nearest metre.

6. Two surveyors are trying to determine the height of a cliff on the other side of the river from where they are standing. They have taken some measurements; given the diagram below, calculate the height of the cliff to the nearest hundredth of a metre.



7.



- a. Find the length of the body diagonal in this rectangular prism to the nearest tenth.
- b. Find the measure of $\angle AFH$, the angle between the body diagonal and a diagonal of the base of the prism to the nearest tenth.