

Trig Word Problems

Name _____

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Basic Word Problems

- 1) Jimmy is 25' from the base of a tree. The angle of elevation to the top of the tree is 51° . Determine the height of the tree.
- 2) Jimmy is standing 30m from the base of a tree. He determines the angle of elevation is 31° with a clinometer that he reads 1.5m above the ground. Determine the height of the tree.
- 3) A ladder is leaning against a wall. It has an angle of elevation of 60° and reaches 8.5' up the wall. Determine the length of the ladder.
- 4) A 12' ladder is leaning against a wall. its base is 3 feet from the wall. Determine its angle of elevation.
- 5) Jimmy is flying a blimp. The angle of depression to his landing spot is 23° . He has an altitude of 2300m. Determine his horizontal distance to the landing spot.
- 6) Jimmy is looking out his window at a tree that is 32' from his house. The angle of depression to the bottom of the tree is 61° . Determine the height of his window.

Kinda Hard

- 7) Jimmy is standing on top of a 40' high building. The angle of elevation to a nearby 60' high building is 41° . How far apart are the buildings?
- 8) Jimmy is standing at the edge of a building. There is another building 45' away. The angle of depression to the bottom of the other building is 52° and the angle of elevation to the top of the other building is 24° . Determine the height of the other building.
- 9) Jimmy is standing half way between 2 trees that are 200' apart. The angle of elevation to the top of the pine tree is 37° and the angle of elevation to the top of the spruce tree is 26° . Which tree is taller and by how much?
- 10) Jimmy is being bullied. The bully is 8" taller than he is and is 3' away. Determine the angle of elevation when Jimmy looks up at the bully's face.

Hard

- 11) Jimmy is looking at a billboard on a wall that is 20m away. The angle of elevation to the bottom of the sign is 39° . The angle of elevation to the top of the sign is 45° . Determine the height of the sign. (Not height from the ground, just the sign.)
- 12) Jimmy is standing at the edge of a building. 15m away, there is another building. The angle of depression to the top of the other building is 18° . The angle of depression to the bottom of the other building is 63° . Determine the height of the other building.
- 13) Jimmy is standing 200' from a tower. The angle of elevation to the top of the tower is 11° . Jenny, who is the same height, is 300' from the tower. Determine her angle of elevation to the top of the tower.
- 14) Jimmy is standing 500' south of a tower. The angle of elevation to the top of the tower is 13° . Jenny is standing west of the tower and her angle of elevation to the top of the tower is 17° . Determine the distance between Jimmy and Jenny.

Legitimately Difficult

- 15) Jimmy and Jenny are standing 100' apart. Between them is a tree. Jimmy's angle of elevation to the top of the tree is 20° . Jenny's angle of elevation to the top of the tree is 30° . Determine their distances to the tree and the height of the tree.
- 16) One of the legs of a right triangle is 10cm. The other leg is 2cm shorter than the hypotenuse. Determine the measures of the 2 non right angles in the triangle.

Answers to Trig Word Problems

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| 1) 30.9' | 2) 19.5m | 3) 9.8' | 4) 75.5° |
| 5) 5418.5m | 6) 57.7' | 7) 23' | 8) 77.6' |
| 9) The pine by 26.6' | 10) 12.5° | 11) 3.8m | 12) 24.6m |
| 13) 7.4° | 14) 626.5° | 15) Jiimy=61.3' Jenny = 38.7' tree = 22.3' | |
| 16) 22.6° and 67.4° | | | |