

12.1 Homework #3

Draw a picture to support your answer and round answers to the nearest tenth.

1. A six meter-long ladder leans against a building. If the ladder makes a 60° angle with the ground, how far up the wall does the ladder reach? How far from the wall is the base of the ladder?

2. A fan is seated in the upper deck of a stadium 200 feet way from home plate. If the angle of depression to the field is 62° , at what height is the fan sitting?

3. A hockey player takes a shot 20 feet away from a 5-foot goal. If the puck travels at 15° angle elevation toward the center of the goal, will the player score?

4. Two water slides are 50 meters apart on level ground. From the top of the taller slide, you can see the top of the shorter slide at an angle of depression of 15° . If you know the top of the other slide is approximately 15 meters above the ground, about how far above the ground are you?

5. Due to a storm, a pilot flying at an altitude of 528 feet had to land. If he has a horizontal distance of 2000 feet to land, at what angle of depression should he land?

6. John stands 150 meters from a water tower and sights the top at an angle of elevation of 36° . If John's eyes are 2 meters above the ground, how tall is the tower?

7. John is on a tour bus in Paris with his family. He sees L'arc de Triomphe at an angle of elevation of 34° . If the arc is 162 feet tall, how far away is the bus?

8. Two telephone repair workers arrive at a location to restore electricity after a power outage. One of the workers climbs up the telephone pole while the other worker stands 10 feet to the left of the pole and their truck is parked to the right of the pole. If the terminal box is located 30 feet above the ground on the pole and the angle of elevation from the truck to the repair worker on the pole is 27° , how far is the worker on the ground standing from the truck?

9. A digital camera with a panoramic lens is described as having a view with an angle of elevation of 38° . If the camera is on a 3-foot tripod aimed directly at a 124-foot-tall monument, how far from the monument should you place the tripod to see the entire monument in your photograph?

10. The recommended angle of elevation for a ladder used in fire fighting is 75° . At what height on a building does a 21-foot ladder reach if the recommended angle of elevations is used?

11. Adult flying squirrels can make glides of up to 160 feet. If a flying squirrel glides a horizontal distance of 160 feet and the angle of depression is 9° , find the change in height.

12. A hang glider climbs at a 20° angle of elevation. Find the change in altitude of the hang glider when it has flown a horizontal distance of 60 feet.

13. Erin is parasailing and is attached to the boat with a 250-foot long towrope. The angle formed by the rope and the water is 32° . How high above the water is Erin?

14. Jessica stands 150 feet from the base of a tall building. She measures the angle from her eye to the top of the building to be 84° . If her eye level is 5 feet above the ground, how tall is the building?

Algebra 2
12.1 Homework #3

Name: _____ KEY _____

1. 5.2 m, 3 m	6. 111.0 m	11. 25.3 ft
2. 176.6 ft	7. 240.2 ft	12. 21.8 ft
3. no, it will go over the goal	8. 68.9 ft	13. 132.5 ft
4. 28.4 m	9. 154.9 ft	14. 1432.2 ft
5. 14.8°	10. 20.3 ft	