Honors Math 2
## Angles of Elevation and Depression
Part 2

Tell whether each statement is true or false. If false, explain why.

1. The angle of elevation from your eye to the top of a tree increases as you walk toward the tree.

2. If you stand at street level, the angle of elevation to a building's tenth-story window is greater than the angle of elevation to one of its ninth-story windows.

3. As you watch a plane fly above you, the angle of elevation to the plane gets closer to 0° as the plane approaches the point directly overhead.

4. An angle of depression can never be more than 90°.

CHALLENGE AND EXTEND

5. Susan and Jorge stand 38 m apart. From Susan's position, the angle of elevation to the top of Big Ben is 65°. From Jorge's position, the angle of elevation to the top of Big Ben is 49.5°. To the nearest meter, how tall is Big Ben?

49.5°

65°

38 m
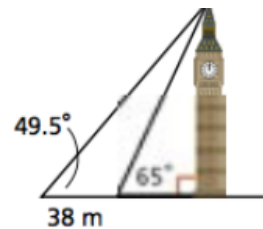
6. A plane is flying at a constant altitude of 14,000 ft and a constant speed of 500 mi/h. The angle of depression from the plane to a lake is 6°. To the nearest minute, how much time will pass before the plane is directly over the lake?

7. A skyscraper stands between two school buildings. The two schools are 10 mi apart. From school A, the angle of elevation to the top of the skyscraper is 5°. From school B, the angle of elevation is 2°. What is the height of the skyscraper to the nearest foot?

8. Katie and Kim are attending a theater performance. Katie's seat is at floor level. She looks down at an angle of 18° to see the orchestra pit. Kim's seat is in the balcony directly above Katie. Kim looks down at an angle of 42° to see the pit. The horizontal distance from Katie's seat to the pit is 46 ft. What is the vertical distance between Katie's seat and Kim's seat? Round to the nearest inch.