

3. An antenna is on top of a building. From a point 7,000 feet from the building, the angles of elevation to the top and bottom of the antenna are 10.2° and 8° respectively. How tall is the antenna?

Law of Sines

4. When an airplane is landing on a 9,000-foot runway, the angles of depression to the ends of the runway are 10° and 12° . How far is the plane from the far end of the runway?

5. A flagpole is located on a slope that makes an angle of 20° with the horizontal. The pole casts a 40-foot shadow down the hill when the angle of elevation to the top of the pole is 45° . Find the height of the flagpole.

Law of Cosines

6. On a baseball field, the four bases are located at the vertices of a square 90 feet on each side. If the pitcher's mound is 60.5 feet from home plate, how far is the mound from first base?

7. Two ships leave a port at 9:00 AM. One ship travels at a bearing of $N50^\circ W$ at a speed of 14 miles per hour and the other travels at a bearing of $S65^\circ W$ at a speed of 18 miles per hour. How far apart are the ships at noon?

