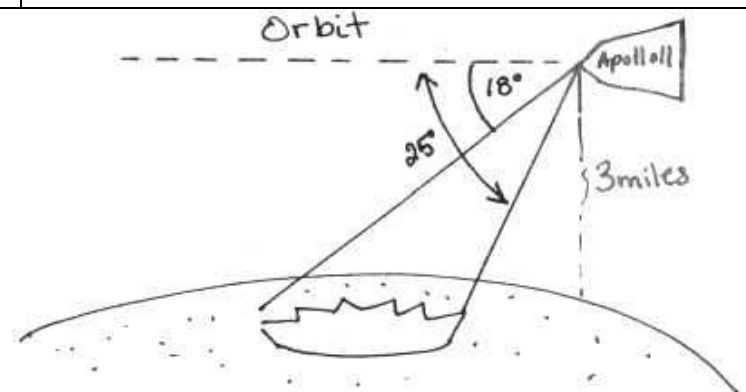


8.7 WORKSHEET**Answer each of the following. Round all answers to the nearest hundredth unless otherwise indicated.**

- | | |
|---|---|
| 1) A surveyor is 100.00 meters from a bridge. The angle of elevation to the top of the bridge is 35° . The surveyor's instrument is 1.45 meters above the ground. Find the height of the bridge. | 2) A surveyor is 100.00 meters from a building. The angle of elevation to the top of the building is 23° . The surveyor's instrument is 1.55 meters above the ground. Find the height of the building. |
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- | | |
|---|---|
| 3) To secure a 500-meter radio tower against high winds, guy wires are attached to a ring on the tower. The ring is 5 meters from the top. The wires form a 15° angle with the tower. Find the distance from the tower to the guy wire anchor in the ground. | 4) In a parking garage, each level is 20 feet apart. Each ramp to a level is 130 feet long. Find the measure of the angle of elevation for each ramp. |
|---|---|

- 5) Before Apollo 11 descended to the surface of the moon, it made one orbit at a distance of 3 miles from the surface. At one point in its orbit, the onboard guidance system measured the angles of depression to the near and far edges of a huge crater. The angles measured
- 25°
- and
- 18°
- . Find the distance across the crater.



<p>6) A lighthouse built at sea level is 150 feet high. From its top, the angle of depression of a buoy is 25°. Find, to the nearest foot, the distance from the buoy to the foot of the lighthouse.</p>	<p>7) A ladder is leaning against the side of a house and forms an angle of 65° with the ground. The foot of the ladder is 8 feet from the building. Find the length of the ladder to the nearest foot.</p>
<p>8) At a certain time of day, the angle of elevation of the sun is 44°. Find, to the nearest meter, the shadow cast by a building 30 meters high.</p>	<p>9) A road rises vertically 40 feet over a horizontal distance of 630 feet. What is the angle of elevation of the road?</p>
<p>10) A train in the mountains rises 10 feet for every 250 feet it moves along the track. Find the angle of elevation of the track.</p>	<p>11) A plane rose from take-off and flew at an angle of 11° with the ground. When it reached an altitude of 500 feet, what was the horizontal distance the plane had flown?</p>