

Unit 7 Lesson 4 (Section 8-5) Angles of Elevation and Depression

***OBJECTIVES: Solve problems involving angles of elevation
Solve problems involving angles of depression.***

Angle of Elevation:

The angle between the line of sight and the horizontal when an observer looks upward. (Above the horizontal)

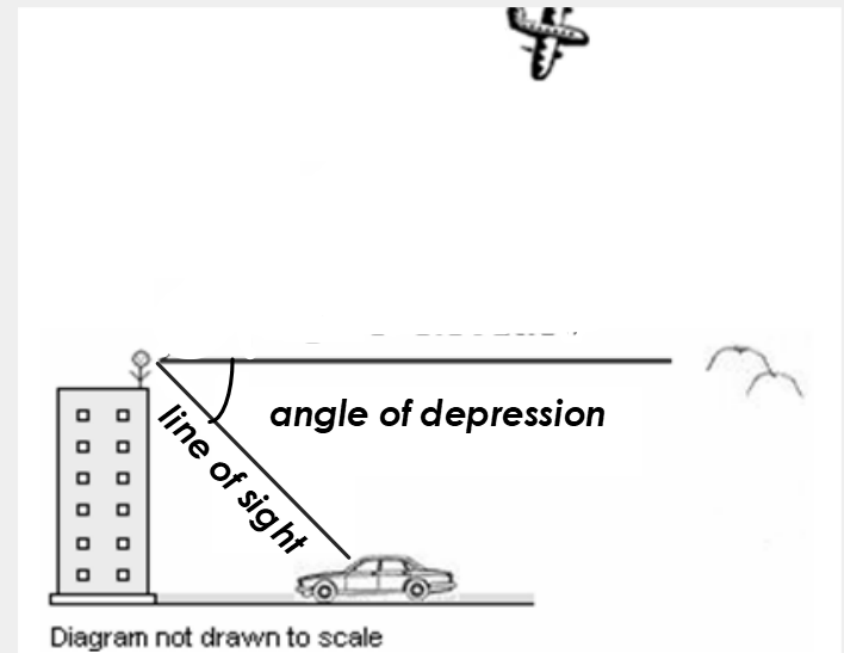
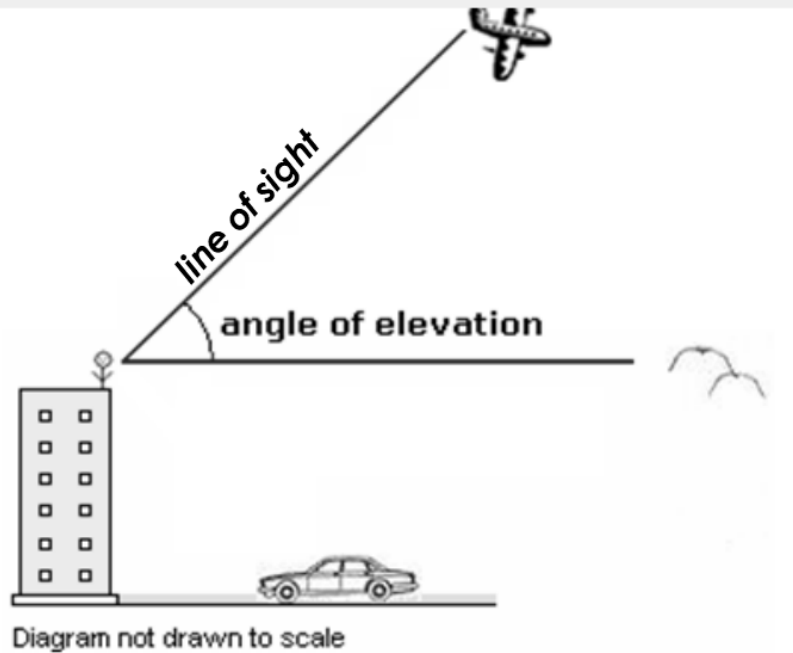
Angle of Depression:

The angle between the line of sight when an observer looks downward and the horizontal. (Below the horizontal)



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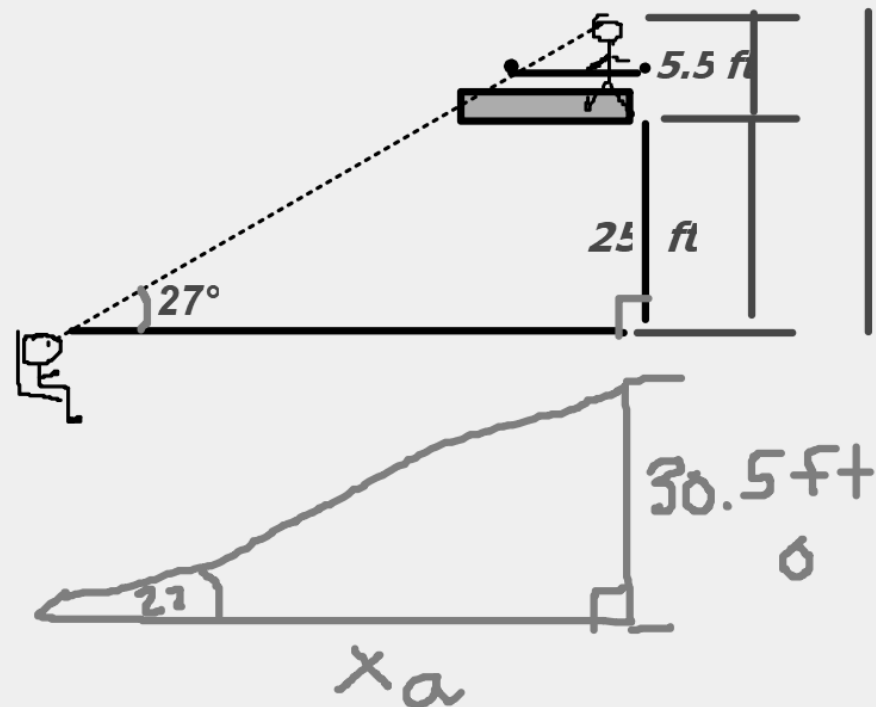
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1.) At the circus, a person in the audience watches the high-wire routine. A 5-foot-6-inch tall acrobat is standing on a platform that is 25 feet off the ground. How far is the audience member, to the nearest tenth of a foot, from the base of the platform, if the angle of elevation from the audience member's line of sight to the top of the acrobat is 27° ?

$$\tan 27 = \frac{30.5}{x}$$
$$x = \frac{30.5}{\tan 27}$$

$$x \approx 59.9$$

The audience member is about 59.9 ft away.

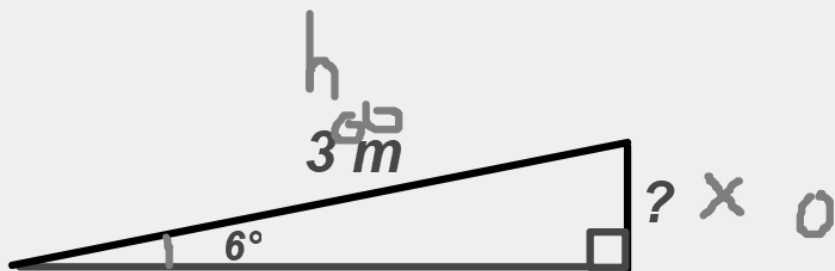


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2.) A wheelchair ramp is 3 meters long and inclines at 6° . Find the height of the ramp to the nearest tenth of a

centimeter. $3\text{ m} = \underline{300}\text{ cm}$ $\sin 6 = \frac{x}{300}$



$$x \approx 31.4$$

The ramp is about 31.4 cm tall.