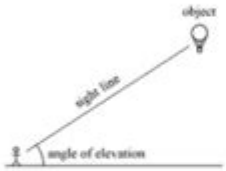
Worksheet Angles Of Depression And Elevation

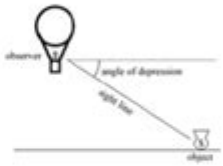
Name: _____

Angles of Elevation and Depression

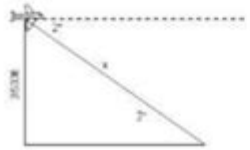
Angles of Elevation



Angles of Depression



1. An airplane is flying 3500 ft above the ground and begins a 2° decent to land at an airport. How many miles from the airport is the airplane when it starts its decent?



2. A surveyor stands 200 ft from a building to measure its height with a theodolite. The angle of elevation to the top of the building is 35°. How tall is the building? **(Use the picture Example 2 on Pg 446 to help you draw the diagram for this problem)**

3. A person looks down at a house at an angle of depression of 27°. If the hot air balloon is 580 yards from the house what is the balloons elevation (how far from the ground is the balloon)?

4. A flagpole that is 21 ft tall casts a shadow that is 30 ft long. What is the angle of elevation of the sun when this shadow is cast?

Worksheet angles of depression and elevation are crucial concepts in trigonometry that help us understand the relationship between angles and distances in various real-life scenarios. These angles are particularly useful in fields such as architecture, engineering, and navigation. By mastering the principles of angles of depression and elevation, students can solve a variety of problems that involve heights and distances, making these concepts essential for academic success and practical applications.

Understanding Angles of Depression and

Elevation

What are Angles of Depression and Elevation?

Angles of depression and elevation are two types of angles that relate to an observer's line of sight:

- Angle of Elevation: This is the angle formed between the horizontal line and the line of sight when looking upwards at an object. For example, if you are standing on the ground and looking up at the top of a building, the angle formed by your line of sight and the horizontal ground is the angle of elevation.

- Angle of Depression: This is the angle formed between the horizontal line and the line of sight when looking downwards at an object. For instance, if you are at the top of a tower looking down at a person standing on the ground, the angle between your line of sight and the horizontal line from your eye level to the ground is the angle of depression.

Visual Representation

To better understand these angles, consider the following scenarios:

1. Angle of Elevation:
- Stand on the ground (point A).
- Look up at the top of a tree (point B).
- The angle formed at point A between the horizontal line (the ground) and your line of sight to point B is the angle of elevation.

2. Angle of Depression:
- Stand at the top of a building (point C).
- Look down at a car parked on the ground (point D).
- The angle formed at point C between the horizontal line (the level of the building) and your line of sight to point D is the angle of depression.

Applications of Angles of Depression and Elevation

Angles of depression and elevation have numerous applications across different fields:

- **Architecture**