

Angle Of Elevation And Depression Worksheet Answer Key PDF

Angle Of Elevation And Depression Worksheet Answer Key PDF

Disclaimer: The angle of elevation and depression worksheet answer key pdf was generated with the help of StudyBlaze AI. Please be aware that AI can make mistakes. Please consult your teacher if you're unsure about your solution or think there might have been a mistake. Or reach out directly to the StudyBlaze team at max@studyblaze.io.

Part 1: Building a Foundation

What is the angle of elevation?

undefined. A) The angle formed between the horizontal line and the line of sight when looking downward.

undefined. **B) The angle formed between the horizontal line and the line of sight when looking upward.** ✓

undefined. C) The angle formed between two vertical lines.

undefined. D) The angle formed between two horizontal lines.

The angle of elevation is the angle formed between the horizontal line and the line of sight when looking upward.

Which trigonometric function is primarily used to calculate the angle of elevation or depression?

undefined. A) Sine

undefined. B) Cosine

undefined. **C) Tangent** ✓

undefined. D) Secant

The tangent function is primarily used to calculate the angle of elevation or depression.

Which of the following statements are true about the angle of depression? (Select all that apply)

undefined. **A) It is measured from the horizontal line downward.** ✓

undefined. **B) It is used to calculate the height of an object.** ✓

undefined. C) It is always greater than 90 degrees.

undefined. **D) It is the same as the angle of elevation in a right triangle.** ✓

The angle of depression is measured from the horizontal line downward and is used to calculate the height of an object.

Explain the relationship between the angle of elevation and the angle of depression in terms of their positions relative to the horizontal line.

The angle of elevation is measured upward from the horizontal line, while the angle of depression is measured downward from the same horizontal line.

List two real-world applications where angles of elevation and depression are used.

1. Application 1

Architecture for determining building heights.

2. Application 2

Aviation for calculating flight paths.

Angles of elevation and depression are used in fields such as architecture for building heights and in aviation for flight paths.

Part 2: Understanding and Interpretation

If a person is standing 50 meters away from a building and the angle of elevation to the top of the building is 30 degrees, which trigonometric function would you use to find the height of the building?

undefined. A) Sine

undefined. B) Cosine

undefined. C) Tangent ✓

undefined. D) Cotangent

You would use the tangent function to find the height of the building.

Which of the following scenarios involve an angle of depression? (Select all that apply)

undefined. A) A pilot looking down at the runway from the cockpit. ✓

undefined. B) A person looking up at a flag on a pole.

undefined. C) A lighthouse keeper looking down at a ship. ✓

undefined. D) A person looking straight ahead at a mountain.

The scenarios involving an angle of depression include looking down from a height.

Describe how you would set up a problem involving the angle of elevation to find the height of a tree when given the distance from the tree and the angle.

To set up the problem, you would use the tangent function, where the height of the tree is the opposite side and the distance from the tree is the adjacent side.

Part 3: Application and Analysis

A ladder is leaning against a wall, forming a 60-degree angle with the ground. If the base of the ladder is 4 meters from the wall, how would you calculate the height at which the ladder touches the wall?

undefined. A) Use sine function ✓

undefined. B) Use cosine function

undefined. C) Use tangent function

undefined. D) Use secant function

You would use the sine function to calculate the height at which the ladder touches the wall.

You are given the angle of elevation and the distance from the observer to the base of the object. Which of the following can you calculate? (Select all that apply)

undefined. A) The height of the object ✓

undefined. B) The angle of depression

undefined. C) The distance from the top of the object to the observer

undefined. D) The horizontal distance from the observer to the object ✓

You can calculate the height of the object and the horizontal distance from the observer to the object.

A person is standing on a hill and sees a car at an angle of depression of 15 degrees. If the hill is 100 meters high, calculate the horizontal distance from the person to the car.

To calculate the horizontal distance, you would use the tangent of the angle of depression.

If two observers are standing at different distances from a tower and both measure the angle of elevation to the top of the tower, what can be inferred if one angle is larger than the other?

undefined. A) The observer with the larger angle is closer to the tower. ✓

undefined. B) The observer with the larger angle is farther from the tower.

undefined. C) Both observers are at the same distance.

undefined. D) The angles do not provide any information about distance.

The observer with the larger angle is closer to the tower.

Part 4: Evaluation and Creation

Consider a situation where you need to determine the height of a mountain using the angle of elevation. Which of the following factors could affect the accuracy of your calculation? (Select all that apply)

undefined. **A) The precision of the angle measurement ✓**

undefined. **B) The distance from the observer to the mountain ✓**

undefined. **C) The curvature of the Earth ✓**

undefined. **D) The observer's height above sea level ✓**

Factors affecting accuracy include the precision of the angle measurement, the distance from the observer to the mountain, and the observer's height above sea level.

Design a real-world problem involving both the angle of elevation and depression that requires calculating the height of an object. Provide a step-by-step solution to your problem.

A possible problem could involve a person on a hill measuring the height of a tree using both angles.