

Name: \_\_\_\_\_



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**Practice questions:**

a) The angle of elevation from a persons feet to the top of a tree 15m away is  $40^\circ$ .  
To the nearest metre, how tall is the tree? **13m**

b) A 2.5m ladder is leaning against the top of a wall, the angle of elevation from the bottom of the ladders is  $78^\circ$ .  
To the nearest cm, how high is the wall? **2.45m**

c) From a point on the ground 10 ft from the base of a wall, the angle of elevation of the top of the wall measures  $60^\circ$ .  
To the nearest foot, how high is the wall? **17 feet**

d) A man is stood 5m away from a 10m tall tree.  
To the nearest degree, what is the angle of elevation from the man's feet to the top of the tree?  **$63^\circ$**

e) A boy flies a kite and lets out 20m of string.  
The angle of elevation of the string is  $20^\circ$ .  
To nearest metre, how high off the ground is the kite? **7m**

f) A lady is stood on the deck of a boat which is 4m above sea level. The boat is 80m away from a 40m tall cliff. To the nearest degree, what is the angle of elevation from the deck of the boat to the top of the cliff?  **$24^\circ$**

g) A 12 foot ladder is used to scale a 10 foot wall.  
At what angle of elevation must the ladder be situated in order for the top of the ladder to reach the top of the wall? Give your answer to the nearest 1 decimal place.  **$39.8^\circ$**

h) The angle of elevation of a ladder leaning against a wall is  $70^\circ$  and the foot of the ladder is 2.8m away from the wall. Calculate the length of the ladder to the nearest cm. **8.19m**

**Exam question:**

A builder wants to calculate the height of a building.  
He stands 20m from the base of the building and looks up at the top of the building.  
The angle of elevation from the builders feet to the top of the building is  $72^\circ$ .  
Calculate the height of the building correct to the nearest metre.

**62m**



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### Practice questions:

a) From the top of a vertical 35m cliff, the angle of depression of an object that is level with the base of the cliff is  $40^\circ$ . To the nearest metre, how far is the object from the base of the cliff?

**42m**

b) A woman is stood 50m away from a building. The angle of depression from the top of the building to the woman's feet is  $60^\circ$ . To the nearest metre, how tall is the building?

**87m**

c) From an airplane at an altitude of 1500m, the angle of depression to a field on the ground measures  $20^\circ$ . Calculate the horizontal distance from the plane to the field to the nearest metre.

**4121m**

d) A zip wire is 120m long and starts at a height of 30m. To the nearest degree, what is the angle of depression from the top of the zip wire to the floor?

**$14^\circ$**

e) A 2m man is stood on the top of a 35m cliff. He sees a boat at an angle of depression of  $20^\circ$  from his eyeline. Calculate the distance between the boat and the base of the cliff to the nearest metre?

**102m**

f) A building stands on the bank of a river. A tree stands on the opposite bank of the river. If the angle of depression from the top of building to the foot of the tree is  $25^\circ$  and the height of the building is 18 metres, calculate the width of the river to the nearest metre?

**39m**

g) From a plane flying at a height of 500m above ground, the angles of depression of two buildings in the distance measure  $30^\circ$  and  $20^\circ$ . To the nearest metre, how far apart are the buildings?

**508m**

### Exam question:

From the top of an observation tower, the angle of depression to a historic monument is  $20^\circ$ . If the tower is 120 feet in height, how far is the monument from the base of the tower, to the nearest foot?

**330 feet**

