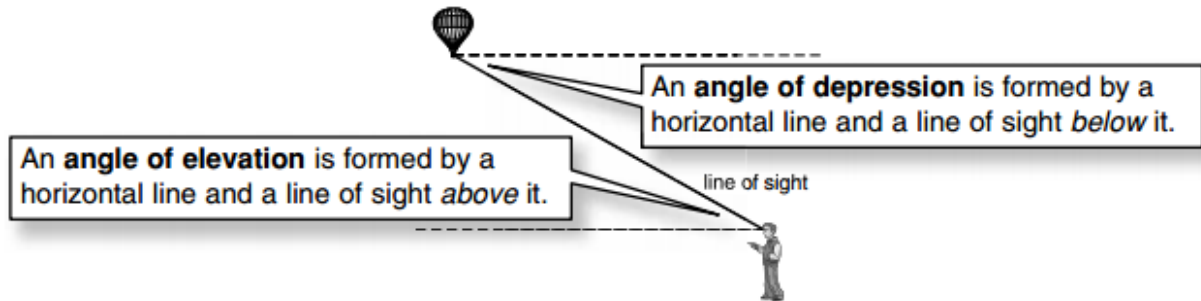




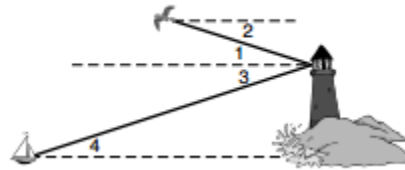
- I can apply trigonometric ratios to real life problems.

Angles of Elevation and Depression



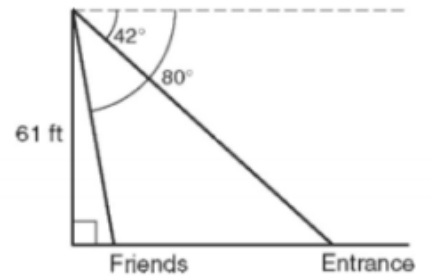
Use the figure below for questions 1 – 4. Classify each angle as an angle of elevation or an angle of depression.

- $\angle 1$ _____
- $\angle 2$ _____
- $\angle 3$ _____
- $\angle 4$ _____

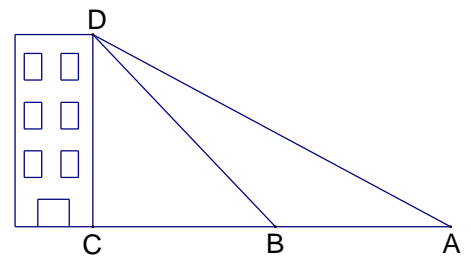


- Noah is looking out Mrs. D'Emanuele's window and sees the top of the school flagpole at an angle of elevation of 22° . Noah is 18 feet above the ground and 50 feet from the flagpole. Find the height of the flagpole.
- At a topiary garden, Maddie is 8 feet from a shrub that is shaped like a dolphin. From where she is standing, she measures the angle of elevation to the top of the shrub is 46° , using a transit that is 5 feet of the ground. What is the best estimate for the height of the shrub?

7. Shane is 61 feet high on a ride at an amusement park. The angle of depression to the park entrance is 42° , and the angle of depression to his friends standing below is 80° . How far from the entrance are his friends standing? Round to the nearest foot.



8. You are standing at point A and are looking up at a very tall building. You measure the angle of elevation to be 22.3° at point A up to the top of the building. You now walk to point B which is exactly 150 feet directly towards the building from point A . You then measure a new angle of elevation of 38.9° . Using this information, what is the height of the building?



- 5) Two buildings are 60 feet apart across a street. A person on top of the shorter building finds the angle of elevation to the roof of the taller building to be 20° . He also finds the angle of depression down to the base of the taller building to be 35° . How tall is the taller building?
- 6) You want to find the height of a tower used to transmit cell phone calls. You stand 100 feet away from the tower. Using a transit placed on a post 5 ft 8 in. off the ground, you measure the angle of elevation to be 40° . How tall is the tower?
- 7) You want to measure the height of a clock tower. You measure the angle of elevation to the top of the clock tower from where you are standing to be 25° . You walk 90 feet towards the tower and measure the angle of elevation from the new point to be 40° . Assuming you measure the angles of elevation on a transit that is 6 ft off the ground, how tall is the clock tower?

Answer Key

- 1) 36.9 ft 2) 0.96 miles 3) 875.2 ft 4) 5.2 ft 5) 63.8 ft 6) 89.6 ft 7) 100.5 ft