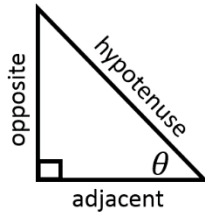


7D/E – Finding Unknown Values

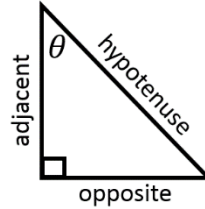
❖ Vocabulary, Formulas, Theories:

- **Trigonometric Ratios:** ratios that are created using trigonometric functions and a right triangle.

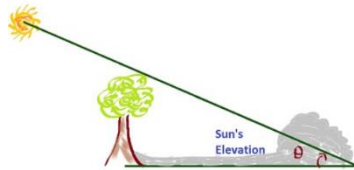
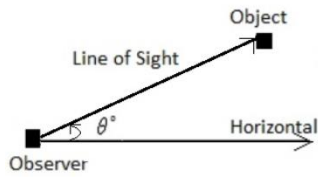
$$\sin\theta = \frac{\text{opposite}}{\text{hypotenuse}} \quad \cos\theta = \frac{\text{adjacent}}{\text{hypotenuse}} \quad \tan\theta = \frac{\text{opposite}}{\text{adjacent}}$$



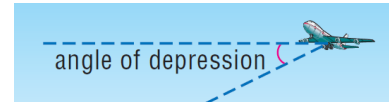
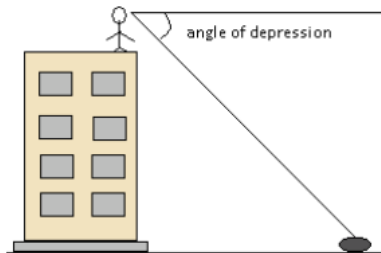
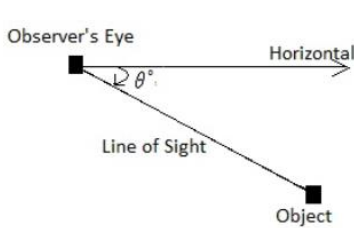
- The “opposite” side and “adjacent” side depend on the location of the angle.
- The hypotenuse is always across from the 90 degree angle.



- **Angle of Elevation:** an angle that opens upwards from a horizontal line.

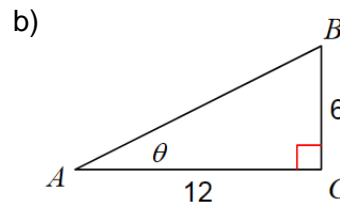
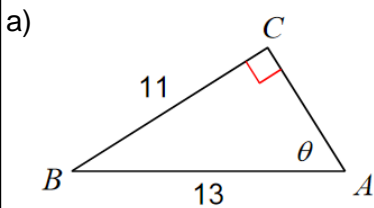


- **Angle of Depression:** an angle that opens downwards from a horizontal line.

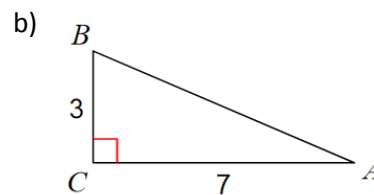
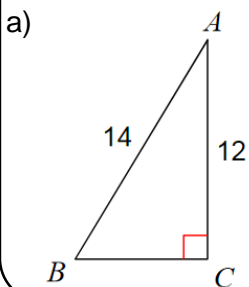


📺 Video - "Finding Unknown Angles - Example" - MathontheWeb (8:17)

EX1) Determine the value of theta.

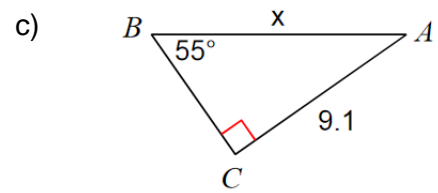
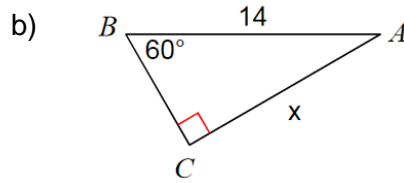
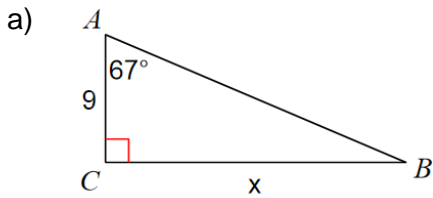


EX2) Determine the value of the unknown angles.



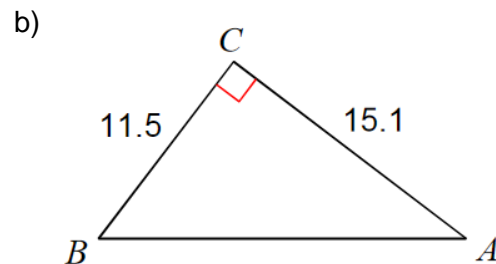
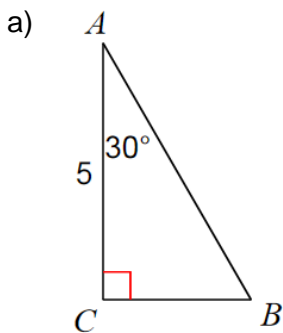
Video - "Finding Unknown Sides - Example" - MathontheWeb (4:59)

EX3) Determine the value of x .



Video - "Solving a Right Triangle - Example" - MathontheWeb (10:03)

EX4) Solve the triangle.



Video - "Angles of Elevation and Depression - Example" - MathontheWeb (11:34)

EX5) The angle of elevation from a boat to the top of a 90 meter hotel is 10 degrees. How far is the boat from the base of the hotel?

EX6) From standing on top of a ledge, a person sees a lion on the ground at an angle of depression of 24 degrees. If from the person's head to the ground is 4.2 meters, how far would the person have to walk from the base of the ledge to get to the lion?