**3.3 Solving Right Triangles**

Goals

* Explaining the relationship between similar right triangles and the definitions of trigonometric ratios
* Solving right triangles, with or without technology
* Solving problems using one or more right triangles

Vocabulary

None

Formulas

From past lesson

Examples

1. Mark wants to calculate the height of a First Nations Native Totem Pole. She positions her transit 19.0 m to the side of the totem pole and records an angle of elevation of 63 ̊ to the top of the totem pole. If the height of Sean’s transit is 1.7 m, what is the height of the totem pole, to the nearest tenth of a meter?
2. Alexis is rock climbing and Camila is belaying. When Camila pulls the rope taut with the ground, the angle of depression is 73 ̊. If Camila is standing 8 ft from the wall, what is the length of rope to the ground in meters?
3. Solve the triangle shown. Express each measurement to the nearest whole unit.

 A

 22cm

 C 42 ̊ B

1. From the height of 50 m in his tower near Francois Lake, BC, a ranger, named Helena, observes the beginnings of two fires. One fire is due west at an angle of depression of 9 ̊. The other fire is due east an angle of depression of 7 ̊. What is the distance between the two fires, to the nearest mile.

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