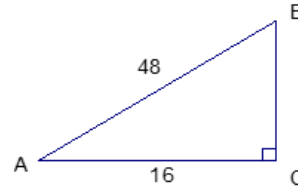
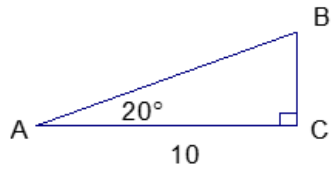
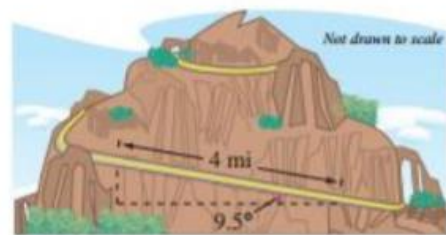


Precalculus Unit 5: 5.5 Homework Worksheet
Applications of Right Triangle Trigonometry

1. Solve the following two triangles. The triangles are not drawn to scale.



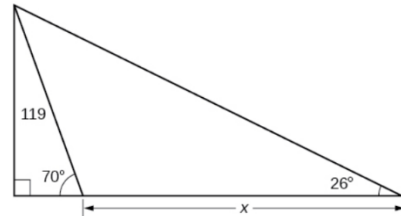
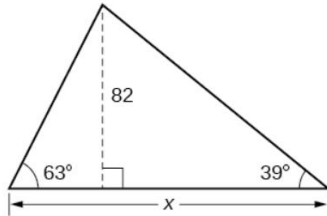
2. The angle of elevation from the base to the top of a waterslide is 13° . The slide extends **horizontally** 58.2 meters. Find the height of the slide.
3. A sign on a roadway at the top of a mountain indicates that for the next 4 miles the grade is 9.5° (this is about a 16.7% grade). Find the change in elevation over the 4 miles for a car descending the mountain.



4. In areas that get a lot of snow, roofs must be inclined at a certain angle to meet building code. That way the snow will slide off the roof and not crush the house. In one town the incline must be at least 20° above the horizontal. A builder is making a roof with a rise of 4 feet for every 12 feet of run. Will this roof meet the building code? **Support your answer with work.**

5. You are building a ramp so that people in wheelchairs can access a building. If the ramp must have a height of 8 feet, and the angle of the ramp must be 5° , how long must the ramp be?

6. Solve for x in the problems below.



7. When an airplane leaves the runway, its angle of climb is 18° and its speed is 275 feet per second. Find the plane's altitude after one minute.

8. A radio tower is located 325 feet from a building. From a window in the building, a person determines that the angle of elevation to the top of the tower is 43° , and that the angle of depression to the bottom of the tower is 31° . How tall is the tower?