**Applications of Right Triangle Trigonometry /40**

 **1.** (3 points) At a point 25 ft. from the base of a totem pole, the angle of elevation of the top of the pole is 50.1. How tall is the totem pole to the nearest foot?

 **2.** (3 points) A water taxi leaves its dock, and travels 7 km due north to pick up medical supplies. It then travels 15 km due east to drop off the supplies at a hospital. To the nearest degree, what is the measure of the angle between the path it took due east and the path it will take to return directly to its dock?

 **3.** (3 points) Determine the area of  to the nearest square centimetre.



 **4.** (4 points) Determine the length of MN to the nearest tenth of a centimetre.



 **5.** (4 points) Calculate the measure of GHJ to the nearest tenth of a degree.



 **6.** (5 points) From the top of an 80-ft. building, the angle of elevation of the top of a taller building is 49 and the angle of depression of the base of this building is 62. Determine the height of the taller building to the nearest foot.



 **7.** (6 points) From the top of a 25-m lookout tower, a fire ranger observes one fire due east of the tower at an angle of depression of 7. She sees another fire due north of the tower at an angle of depression of 3. How far apart are the fires to the nearest metre?

 **8.** (4 points) Two guy wires are attached to the top of a radio tower. The wires are 75 ft. and 52 ft. long. The longer wire is anchored to the ground at a point 58 ft. from the base of the tower. The shorter wire is anchored to the ground at a point between the base of the tower and the longer wire. Calculate the angle of inclination of the shorter guy wire to the nearest tenth of a degree.

 **9.** (4 points) In this regular hexagon, the distance from one vertex to the opposite vertex, measured through the centre of the hexagon, is approximately 15.0 cm. Determine the perimeter of the hexagon to the nearest tenth of a centimetre.



 **10.** (4 points) A Girl Guide measured the angle of elevation of the top of a monument as 59 The height of the monument is 38.5 m. She then walked 31.0 m due west from the point where she measured the angle of elevation. Determine the angle of elevation of the monument from her new location to the nearest tenth of a degree.

