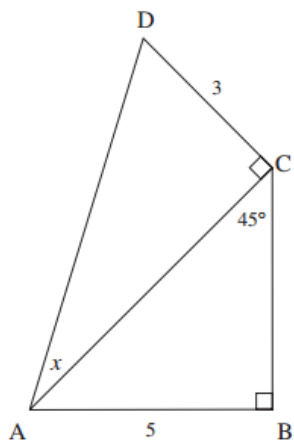


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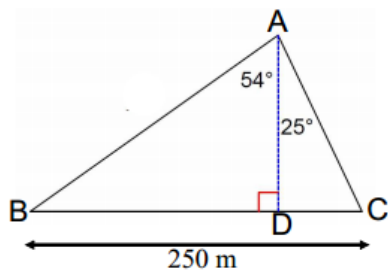
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Chapter 6 Trigonometry 2 Homework

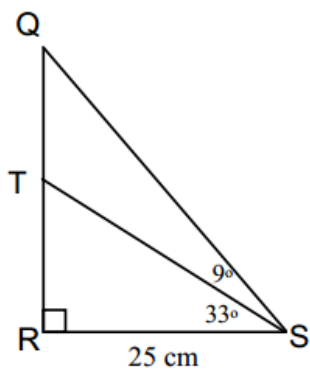
1. a) What is the measure of x to the nearest degree?



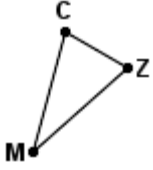

b) What is the measure of AD?



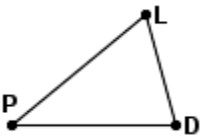
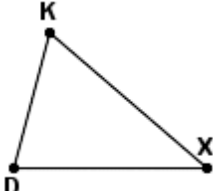
c) What is the measure of QT?



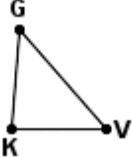
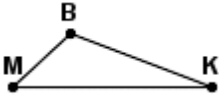
2. Use the law of sine to solve for the unknown. Assume that all angles are acute.

<p>1.</p>  <p> $\angle M = 33^\circ$ $MZ = 21$ $ZC = 12$ $\angle C = \underline{\hspace{2cm}}^\circ$ </p>	<p>2.</p>  <p> $\angle K = 88^\circ$ $\angle R = 66^\circ$ $\overline{PR} = 6.1$ $\overline{PK} = \underline{\hspace{2cm}}$ </p>
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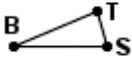
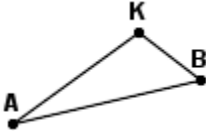
3. Use the law of sine to find all of the unknown sides and angles in each triangle. Assume that all angles are acute.

<p>1.</p>  <p> $\angle D = 75^\circ$ $\overline{PL} = 104.4$ $\overline{PD} = 98.4$ </p>	<p>2.</p>  <p> $\angle X = 41^\circ$ $\angle D = 75^\circ$ $\overline{XK} = 138.7$ </p>
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4. Use the law of cosines to solve for the unknown.

<p>1.</p>  <p> $\angle G = 46^\circ$ $\overline{KG} = 25$ $\overline{VG} = 33.5$ $\angle V = \underline{\hspace{1cm}}^\circ$ </p>	<p>2.</p>  <p> $\overline{MB} = 48$ $\overline{MK} = 120$ $\overline{KB} = 91.2$ $\angle M = \underline{\hspace{1cm}}^\circ$ </p>
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5. Use the law of cosines to find all of the unknown sides and angles in each triangle.

<p>1.</p>  <p> $\angle S = 74^\circ$ $\overline{BS} = 37.6$ $\overline{ST} = 15.2$ </p>	<p>2.</p>  <p> $\overline{AK} = 117$ $\overline{AB} = 145.5$ $\overline{BK} = 58.5$ </p>
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Word problems

1. A window on the fourth floor of a building is 20 m above the ground. From the window, the angle of depression to the base of a nearby building is 31° and the angle of elevation to the top of the building is 40° . How tall is the nearby building to the nearest metre?

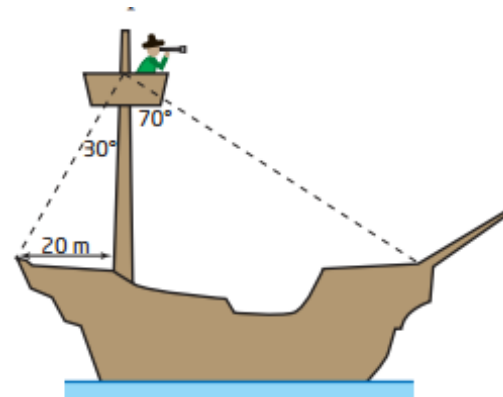
2. Jack and Sangita are facing each other on opposite sides of a 10-m flagpole. From Jack's point of view, the top of the flagpole is at an angle of elevation of 50° . From Sangita's, it is 35° . How far apart are Jack and Sangita?

3. Captain Jack is sitting in the crow's-nest of his ship, as shown.

a) How high above the deck is Captain Jack?

b) What is the length of Captain Jack's ship?

c) How long is each wire holding up the crow's-nest?



4. Ross measures the angle of elevation of an airplane to be 70° . One minute later the angle of elevation is 30° . If the plane is known to cruise at an altitude of 10 000 m, how far did it travel in that minute? What is its cruising speed?

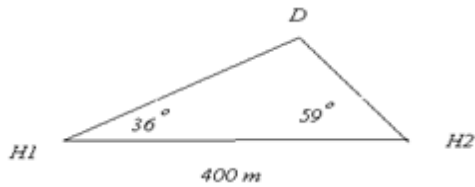
5. A field is in the shape of a triangle. Label the triangle ABC. A surveyor determines that the length of side AB is 620 m. Using a theodolite, the surveyor finds that $\angle A$ is 56.8° and $\angle B$ is 60.4° . Find the perimeter of the field, to the nearest meter.

6. The longest side of a triangle is 50cm. The measures of two angles in the triangle are 42° and 64° . Find the lengths of the other two sides, to the nearest centimeter.
Hint: The longest side is opposite of the largest angle.

7. Shannon works for a landscaping business. Her job is to measure properties. For a triangular piece of land, two sides measure 4.9 m and 5.8 m and meet at a common point separated by a 35° angle. Find the total perimeter of the piece of land.

8. Two hotels are located on the same side of a river. The hotels are on the bank of the river and are 400 m apart. Across the river is the dock for two ferries to bring tourists to the hotels. The angles made by the riverbank and the lines drawn from the hotels to the dock, D , are shown.

- a) How far is each hotel from the dock, to the nearest meter?
- b) What is the width of this part of the river, to the nearest meter?



9. Explain whether you can use the sine law to find p in $\triangle PQR$ when given $\angle P = 47^\circ$, $q = 9\text{ m}$, and $r = 11\text{ m}$.

10. Explain whether you can use the cosine law to find r in $\triangle RST$ when given $\angle T = 53^\circ$, $t = 15\text{ m}$, and $s = 14\text{ m}$.