

## Chapter 7 Test

For #1 to #5, select the best answer.

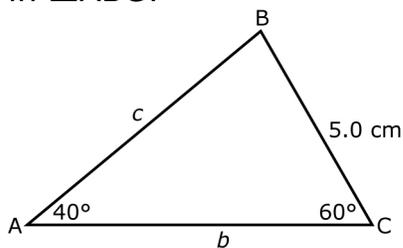
1. When is the cosine law used in an oblique triangle?

**A** when two sides and the angle between them are known  
**B** when two angles and the side between them are known  
**C** when two sides and two angles are known  
**D** when all three angles are known

2. The sine law and the cosine law are not needed to solve which of the following?

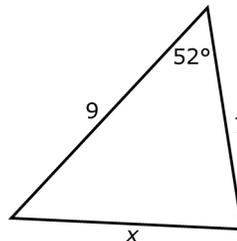
**A** oblique triangles  
**B** right triangles  
**C** scalene triangles  
**D** obtuse triangles

3. What is the length of side  $c$  in  $\triangle ABC$ ?



**A** 4.3 cm  
**B** 5.6 cm  
**C** 5.9 cm  
**D** 6.7 cm

4. What is the length of side  $x$ ?



**A** 14.1  
**B** 11.9  
**C** 12.3  
**D** 7.2

5. A triangle has side lengths 3, 4, and 6 units. What is the measure of the smallest angle in the triangle?

**A**  $26.4^\circ$   
**B**  $38.8^\circ$   
**C**  $40.1^\circ$   
**D**  $42.3^\circ$

6. Write your answer to each part in one or two sentences.

**a)** When can you use the sine law?  
**b)** When can you use the cosine law?

7. Two of the angles in a triangle measure  $100^\circ$  and  $25^\circ$ . The longest side of the triangle is 5 miles long. Determine the length of the other two sides, to the nearest mile.



Name: \_\_\_\_\_

Date: \_\_\_\_\_

**BLM 7-7**  
(continued)

- 8.** Two students are studying the flight of a model rocket. They sit 100 m apart and launch the rocket between them. After 4 s, one student measures the angle between the ground and his line of sight of the rocket as  $75^\circ$ . The other student measures an angle of  $80^\circ$ . What is the height of the rocket 4 s after launch, to the nearest tenth of a metre?
- 9.** A surveyor records the distance around a triangular piece of land. The measurements are 12 miles, 15 miles, and 13 miles. Determine the measures of the interior angles, to the nearest tenth of a degree.

- 10.** An employee of a tunnel boring company measures an angle of  $95^\circ$  at the top of a mountain, between where the new tunnel will enter and exit the mountain. Using a laser range finder, she measures the distance from the top of the mountain to the tunnel entry as 1520 feet. She measures the distance to the tunnel exit as 2320 feet. How long will the tunnel be?

