Chapter 4 Practice Test

Student Text Pages
224–225

Suggested Timing
80 min

Related Resources
- BLM 4–13 Chapter 4 Practice Test
- BLM 4–14 Chapter 4 Test
- BLM 4–15 Practice Test Achievement Check Rubric

Summative Assessment

- **BLM 4-13 Chapter 4 Practice Test** provides a source for possible diagnostic assessment.
- After students complete **BLM 4–13 Chapter 4 Practice Test**, you may wish to use **BLM 4–14 Chapter 4 Test** as a summative assessment.

Accommodations

Memory–allow students to create and use a glossary of vocabulary

Motor–provide a handout of the Practice Test questions with spaces for students to write the answers

Spatial–refer students to the appropriate examples in the chapter sections

Using the Practice Test

This Practice Test can be assigned as an in-class or take-home assignment. If it is used as an assessment, use the following guidelines to help you evaluate the students.

Can students do each of the following?

- use the primary trigonometric ratios to solve problems involving finding sides or angles of right triangles
- use the primary trigonometric ratios to solve problems involving two right triangles
- use the sine law and the cosine law to solve problems involving acute triangles
- select the appropriate method when solving trigonometric problems
- use a scientific calculator to evaluate trigonometric formulas

- **Question 14** is an Achievement Check question. Provide students with **BLM 4–15 Chapter 4 Practice Test Achievement Check Rubric** to help them understand what is expected.

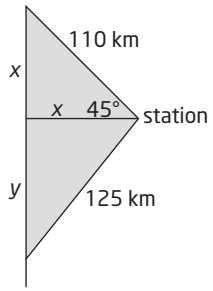
Study Guide

Use the following study guide to direct students who have difficulty with specific questions to appropriate examples to review.

Question	Section(s)	Refer to
1	4.5	Example 1 (page 212)
2	4.1	Examples 1–3 (pages 187–188)
3	4.2	Example 1 (pages 192–193)
4	4.1	Example 2 (pages 187–188)
5	4.1 4.4 4.5	Example 1 (page 187) Example 1 (page 204) Example 1 (page 212)
6	4.2 4.4	Example 2 (page 193) Example 2 (page 205)
7	4.5	Example 2 (pages 212–213)
8	4.1	Examples 1, 2 (pages 187–188)
9	4.1	Examples 1, 2 (pages 187–188)
10	4.2	Example 1 (pages 192–193)
11	4.1	Examples 1–3 (pages 187–188)
12	4.4 4.5	Example 2 (page 205) Example 1 (page 212)
13	4.3 4.4 4.5	Example 3 (pages 198–199) Example 2 (page 205) Example 1 (page 212)
14	4.3	Example 1 (page 198)

Achievement Check Sample Solution (page 225, question 14)

tanker's initial location



A heading of northwest implies a 45° angle. Find the value of x, which will also be the distance of closest approach as the tanker heads south past the station. Once the straight-line distance from the station to the tanker reaches 125 km, the tanker will be out of range. Use the Pythagorean theorem to solve for y then divide the total distance by the speed to find the time the tanker will be on the radar screen.

Let x represent the distance the ship will travel from its initial position to the point of closest approach to the station.

By the sine law:

$$\sin 45^\circ = \frac{x}{110}$$
$$x = 110 \sin 45^\circ$$
$$x \doteq 77.78$$

By the Pythagorean theorem:

$$x^2 + y^2 = 125^2$$
$$y^2 = 125^2 - 77.78^2$$
$$y^2 = 9575.27\ldots$$
$$y = 97.85$$

Add the distances: $x + y \doteq 175.6$

The ship will be on the radar screen for a total of 175.6 km.

$$\text{time} = \frac{\text{displacement}}{\text{speed}}$$
$$\doteq \frac{175.6}{25}$$
$$\doteq 7.03$$

The ship will be on the radar screen for slightly more than 7.0 h.