

Section 6.7 Applications and Models

Objective: In this lesson you learned how to use trigonometric functions to solve real-life problems.

Course Number

Instructor

Date

Important Vocabulary

Define each term or concept.

Angle of elevation

Angle of depression

Bearings

Simple harmonic motion

I. Applications Involving Right Triangles (Pages 510–511)

Example 1: A ladder leaning against a house reaches 24 feet up the side of the house. The ladder makes a 60° angle with the ground. How far is the base of the ladder from the house? Round your answer to two decimal places.

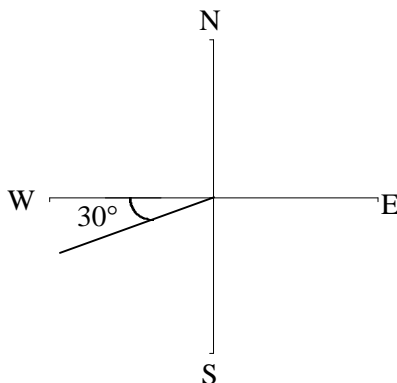
What you should learn

How to solve real-life problems involving right triangles

II. Trigonometry and Bearings (Page 512)

The bearing N 70° E means . . .

Example 2: Write the bearing for the path shown in the diagram below.



What you should learn

How to solve real-life problems involving directional bearings

III. Harmonic Motion (Pages 513–515)

A point that moves on a coordinate line is said to be in simple harmonic motion if . . .

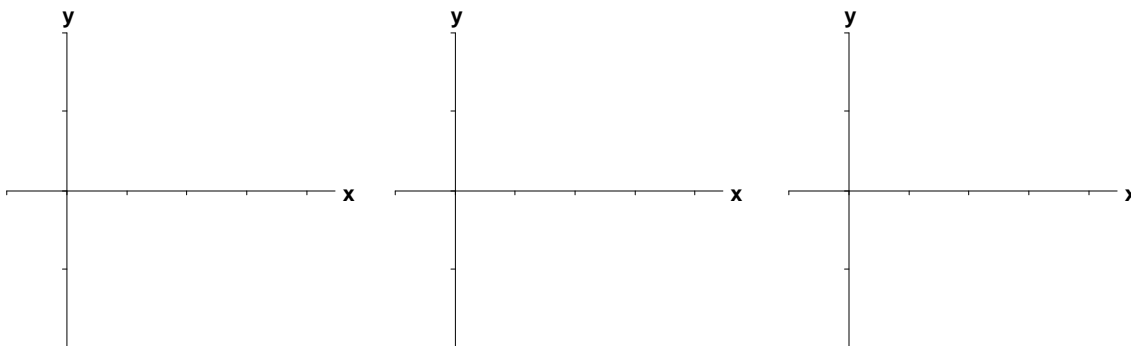
What you should learn
How to solve real-life problems involving harmonic motion

The simple harmonic motion has amplitude _____, period _____, and frequency _____.

Example 3: Given the equation for simple harmonic motion

$$d = 3 \sin \frac{t}{2}, \text{ find:}$$

- (a) the maximum displacement,
- (b) the frequency of the simple harmonic motion,
and
- (c) the period of the simple harmonic motion.

**Homework Assignment**

Page(s)

Exercises