Course Number

Instructor

Date

Section 4.8 Applications and Models

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

I. Applications Involving Right Triangles (Pages 331–332)

What you should learn
How to solve real-life problems involving right triangles

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.

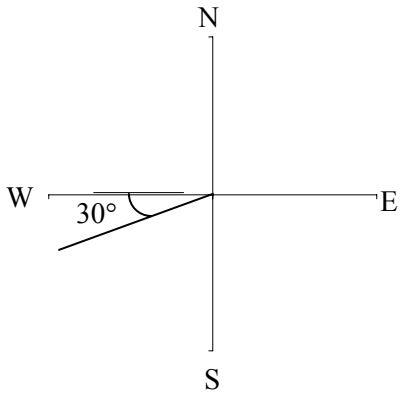
II. Trigonometry and Bearings (Page 333)

What you should learn
How to solve real-life problems involving directional bearings

Used to give directions in surveying and navigation, a **bearing** measures . . .

The bearing N 70° E means . . .

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



III. Harmonic Motion (Pages 334–3336)

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

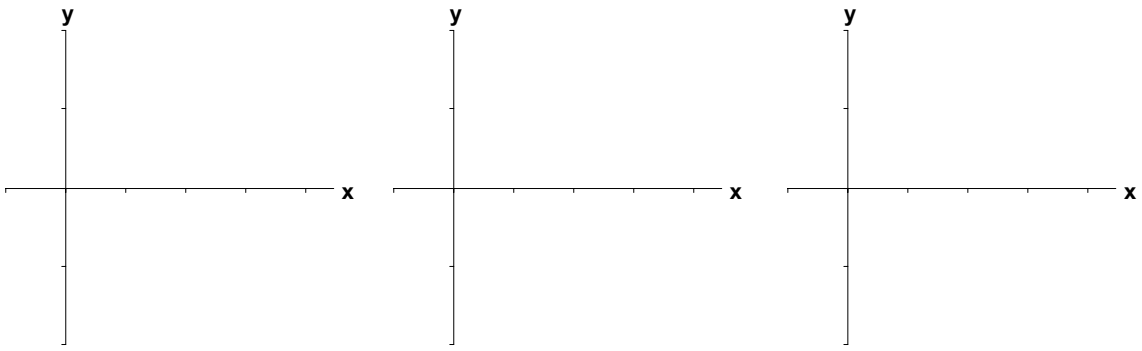
The vibration, oscillation, or rotation of an object under ideal conditions such that the object's uniform and regular motion can be described by a sine or cosine function is called _____ _____.

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

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

Example 3: Given the equation for simple harmonic motion $d = 3\sin\frac{t}{2}$, find:

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



Homework Assignment

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Exercises