9.1

#108. **108. *Comparing wind chills.*** Use the formula from

Exercise 107 to determine who will feel colder:

a person in Minneapolis at 10°F with a 15-mph wind

or a person in Chicago at 20°F with a 25-mph wind.

9.2

128. ***Radius of a sphere.*** The radius of a sphere is given by

the formula

r ={0.75V} 1/3

\_\_\_\_\_\_\_

#

9.2

#132. ***Top bond fund.*** An investment of $10,000 in the

Emerging Country Debt Fund in 2001 was worth $24,780

in 2006 (www.money.com). Use the formula from the

previous exercise to find the 5-year average annual

return.

9.3

114. ***Area of a triangle.*** Find the exact area of a triangle with

a base of \_3\_0 meters and a height of \_\_6 meters

9.5

116. ***Orbit of Venus.*** If the average radius of the orbit of Venus

is 0.723 AU, then how many years does it take for Venus

to complete one orbit of the sun?

10.1

**104. *Time to swing.*** The period *T* (time in seconds for one complete

cycle) of a simple pendulum is related to the length *L*

(in feet) of the pendulum by the formula 8*T*2 \_ *\_*2*L*. If a

child is on a swing with a 10-foot chain, then how long

10.2

**82. *Diagonal brace.*** The width of a rectangular gate is 2 meters

(m) larger than its height. The diagonal brace measures

\_6\_ m. Find the width and height.

***90. Foul ball.*** Suppose Charlie O’Brian of the Braves hits a

baseball straight upward at 150 ft/sec from a height of 5 ft.

**a)** Use the formula to determine how long it takes the ball

to return to the earth.

**b)** Use the accompanying graph to estimate the maximum

height reached by the ball.

then the cost per person will decrease by $15. How many

people are in the original group?

***94. Sharing cost.*** The members of a flying club plan to share

equally the cost of a $200,000 airplane. The members

want to find five more people to join the club so that the

cost per person will decrease by $2000. How many members

are currently in the club?

10.3

84. ***Gone fishing.*** Debbie traveled by boat 5 miles upstream to

fish in her favorite spot. Because of the 4-mph current, it

took her 20 minutes longer to get there than to return. How

fast will her boat go in still water?

90. ***Open-top box.*** Thomas is going to make an open-top box

by cutting equal squares from the four corners of an

11 inch by 14 inch sheet of cardboard and folding up the

sides. If the area of the base is to be 80 square inches, then

what size square should be cut from each corner?

**Figure for Exercise 90**

*x x*

14 in.

*x*

*x*

11 in.

*x*

? ?

94. ***Golden painting.*** An artist wants her painting to be in the

shape of a golden rectangle. If the length of the painting is

36 inches, then what should be the width? See the previous

exercise.

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