Sec 1.4

9. $x = 6.3$ ft., $h = 14.9$ ft.

10. $y = 4.85$ m., $h = 8.27$ m.

11W. Triangle XYH has $H = 90°$, $X = 40°$, $Y = 50°$. Explain why this is not enough information to solve the triangle.

12. Find exact values:

a) $\sin^{-1}\frac{\sqrt{3}}{2}$. (Remember that you are looking for the acute angle whose sine is $\frac{\sqrt{3}}{2}$.)

b) arctan 1

c) $\cos^{-1}\frac{1}{\sqrt{2}}$

13. Find the acute angle X such that X = arccos n = arcsin n. (Think about what this is asking. For what acute angle X will sin X = cos X.)

14. A wall is 6 ft. tall. It casts a shadow that is 5 ft. long. The rays of the sun make what angle with the ground?

Sec 2.1

9. Find the reference angle for a) 135°

b) 225°.

10W. If two angles have the same reference angle, must the angles be coterminal?

Explain.

Sec 2.4

b) Based on the table and the graph, make a guess about the period of this function.

c) From your graph approximate h(7).

d) What do you think the function would give you for h(44)?

4W. In your own words, explain what it means for a function to be periodic.

5. With your calculator in degree mode, set xmin = 0, xmax = 720, xscale = 90, ymin = -2, ymax = 2, yscale = .5.

a) Graph Y1 = sin(x). Copy your graph here.

b) How many periods are shown on your graph?

c) If one particular period starts at x = 90°, at what x value does it end?

Sec 3.5

4.The letters r and q stand for positive constants. For each formula, express the period and the amplitude in terms of r and/or q.

a) $y = r \sin(qx)$ per = ________________, amp = ______________

b) $y = r \cos(rx)$ per = ________________, amp = ______________

c) $y = \frac{r}{q} \sin(rqx)$ per = ________________, amp = ______________

d) $y = -q \cos(\frac{x}{r})$ per = ________________, amp = ______________

5. A function involving sine has input variable x. The coefficient on x is 4, and the coefficient on sine is 8. Find the period and the amplitude.

6. A function involving cosine has one high point at x = 0 and another high point at x = 12. We don't know if there are more high points between x = 0 and x = 12 or not.

a) Could the period of this function be 24? Explain.

b) What is the largest possible value of the period?

c) List three values that could be the period.

7. A function involving sine has a high point at (2,16) and a low point at (10,12).

a) What is the amplitude?

b) What is the average value?

c) What is one possible value of the period?

Sec 4.2

3. Each of the following statements is impossible. Indicate why.

a) arcsin m = $2\pi/3$

b) $\sin^{-1} m = 1.8$

c) arcsin 30º = k

d) arcsin 1.3 = p

4. Solve each equation for z. Assume that values of z and w represent valid values for the functions.

a) sin z = w

b) arcsin z = w

c) sin(z+1) = w

d) $\sin^{-1}$(z+1) = w

4.2

e) $2 + 3\sin(z+1) = w$

f) $2 - 4\arcsin(z-1) = 3w$

5. Determine whether or not each of the following intervals could have been used as the restricted domain in order to define inverse sine. If an interval could NOT have been used, indicate why.

a) $[0, \pi]$

b) $[0°, 360°]$

c) $[90°, 180°]$

d) $[-\pi, 0]$

e) $[90°, 270°]$

f) $[-3\pi/2, -\pi/2]$

Sec 4.3

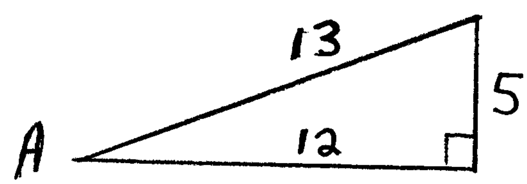
c)$\cos(z-1) = w$

d) $\cos^{-1}(z-1) = w$

e) $3 + 2\cos(z+1) = w$

f) $4 - 2\cos(z-1) = w$

9. Consider ΔABC.



a) Find cos A.

b) Express $\angle A$ in terms of the sides of the triangle.

c) Find $\sin(\cos^{-1}(12/13))$.

d) Find $\cos(\arcsin(12/13))$.

e) Find $\tan(\arccos(5/13))$

f) Find $\cos(\cos^{-1}(5/13))$