

## Chapter 2

1. Write a program to convert Fahrenheit temperature to Celsius temperature for one input value. Output both the Fahrenheit and the Celsius values. The conversion formula is:

$$c = \frac{5(f - 32)}{9}$$

3. Write a program to evaluate the polynomial

$$f(x) = x^3 + 5x^2 + 10x + 15$$

7. Write a program that calculates the two solutions of the equation  $ax^2 + bx + c = 0$ , given  $a$ ,  $b$ , and  $c$ . The solutions are given by

$$x_1 = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

## Chapter 1

3. Write an algorithm to compute the distance  $s$  fallen by an object in free fall. The formula is:

$$s = s_0 + v_0 t + \frac{1}{2} a t^2$$

where  $s_0$  is the initial position in feet,  $v_0$  is the initial downward velocity in ft/sec,  $t$  is the time in seconds, and  $a$  is 32.2 ft/sec<sup>2</sup>. The input values are  $s_0$  and  $v_0$ . The output values are  $s$  and  $t$  where  $t = 0, 5, 10, 15, 20, \dots, 100$ .