1. 15% Suppose that , and *t* = 0:0.2:4, *a* = 5, and *b* = 2. Use MATLAB code to compute the following expression:

**(a)** .

(b) 

(c)  (Answer with the program only)

1. Table 2.1 shows the costs associated with a certain product, and Table 2.2 shows the production volume for the four quarters of the business year. Use MATLAB to find the quarterly costs for materials, labor, and transportation; the total material, labor, and transportation costs for the year; and the total quarterly costs.

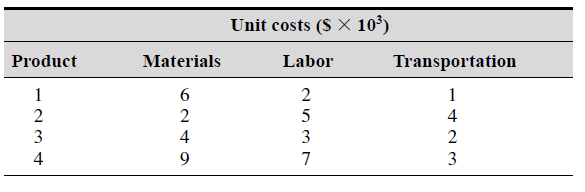


Table2.1 Product cost

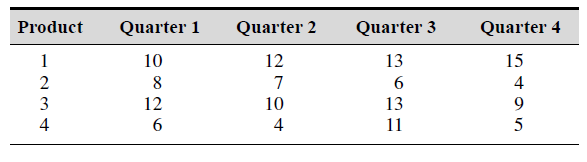
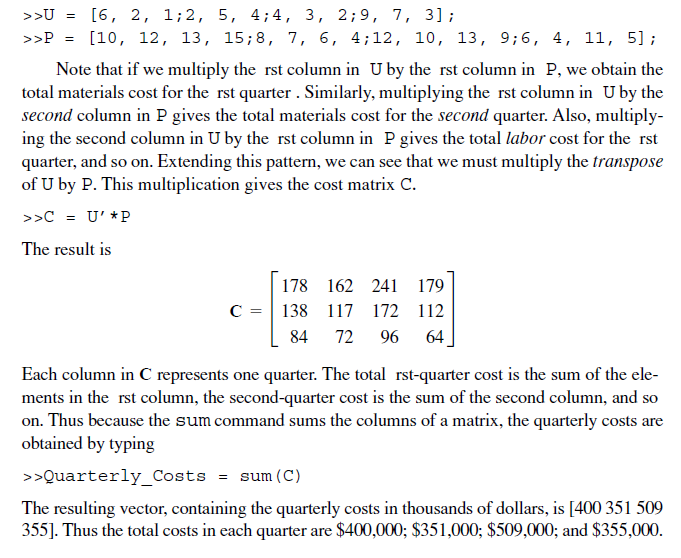
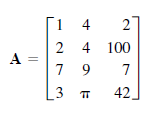


Table2.2 Quarterly production volume

Solution



1. 27%



Use MATLAB to find the following:

1. Construct a matrix **B**，it is the transpose of A.
2. Construct a matrix **D,** deleting **3-nd row of A.**
3. Construct vector **x,** its elements is the only third row of **B**.
4. Calculate the sum of all the elements of **x.**
5. Pointwise multiplication of the 2-nd row of A and 3-th column of B.
6. 15% Write a MATLAB SUB-function to evaluate the members of the sequence, where a, and n are the inputs and the sequence value of is the output of this SUB-function and save it as a script file. Then, write a main function to input the range of the value n from 0 to 20, and =2, and call the SUB-function to evaluate the sequence value, and display the value of n and by using *fprintf*, as the following format:

n 

1. 0
2. 1
3. 8/3

1. 20% A fenced enclosure consists of a rectangle of length *L* and width 2*R* and a semicircle of radius *R*, as shown in Figure 4 . The enclosure is to be built to have an area *A* of 2000 ft2. The cost of the fence is $50 per foot for the curved portion and $40 per foot for the straight sides. Use the fminbnd function to determine with a resolution of 0.01 ft the values of *R* and *L* required to minimize the total cost of the fence. Also compute the minimum cost

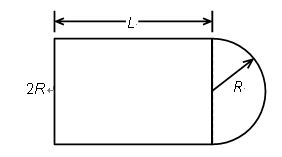


Figure 4

**Hint : use the Minimizing a Function of One Variable:** The fminbnd function finds the minimum of a function of a single variable, which is denoted by x. Its basic syntax is

fminbnd(@function, x1, x2)

where @function is a function handle. The fminbnd function returns a value of x that minimizes the function in the interval [x1 <= x <= x2]. For example, fminbnd(@cos,0,4) returns the value *x* = 3.1416.

