Matlab midterm exam

1. Construct following matrix A、B and C .

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Use MATLAB to find the following:

a. Construct a matrix **D**, it is the **transpose of C**.

b. Construct a matrix **E,** deleting **2nd and 4th row of A.**

c. Construct a matrix **F,** add a column with **values 1** to the **3rd row of B**.

d. Construct a variable **G,** calculate the **sum of all the elements** **of C** and putit into **G**

e. Construct a matrix **H,** the function ofif it cancalculate put it into **H** or write **false**.

2. Write a MATLAB SUB-function to evaluate the memberd of the sequence,where a and n are the inputs an the sequence value of = is the output of this( **SUB-function** , **amonyous 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 a = 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:

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自動產生的描述

1. Suppose that a savings bank offers a tiered rate of interest that increases with the account balance as follows:

5%, 0 ≤ balance ≤ 5000

8%, 5000 < balance ≤ 8000

Interest Rate(balance) = 12%, 8000< balance ≤ 10000

20%, balance > 10000

Suppose that a customer deposits 4000 for 20 years.Write a MATLAB script to

compute the compound balance for 1 through 20。Displayed the number of the years,compute the compound balance for years 1 through 20.Display the number of the years, the interest rate, the amount of interest,and the new balance.(Notes that:

you must use for loop & if-else condition for the program)

4. Suppose that , and *t* = 0:0.2:2, *a* = 5, and *b* = 3. Use MATLAB code to compute the following expression:

**(a)** . (b) 

(Answer with the program only).

Plot the following functions (c)  , and

(d) . Hint: choose steps by yourself.

5. The following tables show the costs associated with a certain product and

the production volume for the four quarters of the business year. Use MATLAB

to find (*a*) the quarterly costs for materials, labor, and transportation; (*b*) the total material, labor, and transportation costs for the year; and (*c*) the total quarterly costs.

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自動產生的描述

6.

A water tank consists of a cylindrical part of radius *r* and height *h* and ahemispherical top. The tank is to be constructed to hold 600  when the water is full. The surface area of the cylindrical part is  and its volume is . The surface area of the hemispherical top is given by , and its volume is given by . The cost to construct the cylindrical part of the tank is $400 per square meter of surface area; the hemispherical part costs $600 per square meter. Use the **fminbnd** function to compute the radius that results in the least cost. Compute the corresponding height *h*.