



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
91, Cadastral Zone, Nnamdi Azikiwe Express Way, Jabi-Abuja  
**FACULTY OF MANAGEMENT SCIENCES**  
**2021\_1 EXAMINATION** 1234

**Course Code: BUS729**

**Course Title: Business Mathematics**

**Credit Unit: 2**

**Instructions:** 1. Indicate your Matriculation Number clearly  
2. Attempt Question 1 and any other two (2) questions  
3. Question 1 is compulsory and carries 30 marks while the other 2 questions carry 20marks each  
4. Present all your points in coherent and orderly manner

**Time Allowed: 2 Hours**

1. Greene Co. shows the following information on its 2012 income statement: Sales = #138,000, Costs = #71,500, Other expenses = #4,100

Depreciation expense = #10,100, Interest expense #7,900, Taxes = #17,760, Dividends = #5,400.

In addition, you're told that the firm issued #2,500 in new equity during 2012, and redeemed #3,800 in outstanding long-term debt

- a. What is the 2012 operating cash flow? **10marks**  
b. What is the 2012 cash flow to creditors? **5marks**  
c. What is the 2012 cash flow to stockholders? **5marks**  
d. If net fixed assets increased by #17,400 during the year, what was the addition to NWC? **10marks**

2a. Discuss Simple and Compound Interest **10marks**

2b. Suppose you invest #2000 at an annual interest rate of 6%. Find your balance at the end of 1<sup>st</sup> year if interest is compounded; a) Yearly b) Semiannually c) Quarterly d) Monthly

**10marks**

3a. Define the following with example

(i) Rational Numbers **3marks**

(ii) Natural Numbers **3marks**

(iii) Prime Numbers **3marks**

(iv) Decimals and Real Numbers **3marks**

(v) Absolute Value **3marks**

3 b. State the basic principles of matrix or algebra **5marks**

4.

Machine	Time per unit (minutes)			Machine capacity (minutes/day)
	Product 1	Product 2	Product 3	
M1	4	9	4	480
M2	8	-	9	490
M3	4	5	-	430

You are required to determine the daily number of units to be manufactured for each product. The profit per unit for product 1, 2 and 3 is #4, #3 and #6 respectively. It is assumed that all the amounts produced are consumed in the market. Formulate the mathematical (L.P) model that will maximize the daily profit. **20 Marks**