

TEST 2

NAME	
DURATION	1 HOUR 30 MINUTES

INSTRUCTIONS TO CANDIDATE:

1. Fill in the above particulars clearly.
2. Write your student ID and the question number at the top of every answer sheet.
3. There are **THREE (3)** questions. Answer **ALL** questions.

Write your answers in the spaces provided. All calculations and assumptions must be clearly stated.

TEST REQUIREMENTS:

1. Scientific calculator

Question number	FOR EXAMINER USE ONLY
	Mark
1	
2	
3	
Total marks	/40



Mathematics for Management
by Nor Alisa Mohd Damanhuri
<http://ocw.ump.edu.my/course/view.php?id=440>

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

This test paper consists of **EIGHT (8)** printed pages including front page.

QUESTION 1

- (a) Given that $\log_6 3 = 0.61315$, without using a calculator, prove that $\log_6 2 = 0.38685$.

(4 Marks)

- (b) Solve for x given that $\log_4(x^2 + 3x) - \log_4(x + 5) = 1$.

(5 Marks)



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QUESTION 2

- (a) Miss Santhi deposited RM 4,000 in Community Bank and she obtained simple interest of RM 300 after three years.
- (i) What was the simple interest rate offered?
 - (ii) How much interest could she earn if she deposited RM 15,000 in the bank for eight months?

(6 Marks)



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(b) Four years ago Monica deposited a sum of money in a savings account that gave 8% simple interest per annum. Today her savings account has a total of RM 6,000.

(i) How much was her initial savings?

(ii) How many years from today will the saving amount to RM 7,800?

(8 Marks)



QUESTION 3

- (a) RM 25,000 is invested for 4 years 9 months. For the first two years, the investment is offered 12% compounded semi-annually. For the rest of the period, the investment is offered 10% compounded quarterly. Find the future value of this investment.

(7 Marks)



(b) Allan wishes to invest RM 8,000 in a fixed deposit account for one year. He has two options:

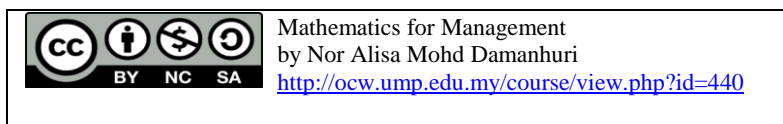
- AAA Bank which offers 3.7% interest compounded semi-annually.
- BBB Bank which offers 3.75% interest compounded annually.

Which bank should Allan choose? Give your reason.

(6 Marks)

- (c) Lauren deposited RM 800 in a bank that offers an annual interest of 6%. How long will it take for the money deposited to reach RM 1,500, if compounded continuously?

(4 Marks)



END OF QUESTION PAPER

APPENDIX

1. Properties of logarithm

$$\log_b(mn) = \log_b m + \log_b n$$

$$\log_b \frac{m}{n} = \log_b m - \log_b n$$

$$\log_b m^r = r \log_b m$$

$$\log_b b = 1$$

$$\log_b m = \frac{\log_a m}{\log_a b}$$

2. Interest

$$I = Prt$$

3. Simple amount

$$S = P(1 + rt)$$

$$S = P + I$$

4. Compound amount

$$S = P \left(1 + \frac{i}{a} \right)^{n \times a}$$

5. Continuous compound amount

$$S = P(e^{it})$$



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