

Course No: MATH103
 Course Title: College Algebra
 Date: 20 / 08 / 2011
 No. of Questions: (4)
 Time 120 Minutes (2 hr)
 Using Calculator (Yes)

University of Palestine



Final Exam
 3rd quadmester 2010/2011
 Total Grade: 40

Instructor Name: Eng. Ahmed Abo absa
 Student No.: _____
 Student Name: _____
 College Name: IT
 Dep. / Specialist: _____
 Using Dictionary (No)

First Question

No. of Branches (2)

(10/40)

Find $A(B + C)$

$$A = \begin{bmatrix} -1 & 2 \\ 3 & -4 \end{bmatrix}; B = \begin{bmatrix} 2 & -5 \\ -4 & 0 \end{bmatrix}; C = \begin{bmatrix} -8 & 7 \\ 2 & -1 \end{bmatrix}$$

Find the determinant.

$$\begin{vmatrix} 1 & 3 & 1 \\ 2 & 1 & -1 \\ 2 & -1 & 1 \end{vmatrix}$$

Find all solutions to the equation by using general equation $2x^2 - 2x + 1 = 0$

Find all the roots of the polynomial equation

$$f(x) = x^3 + 2x^2 - 5x - 6$$

Note: $(x - 2)$ is a root of the above polynomial

Solve the following equations:

$$\log_6(x+3) + \log_6(x-2) = 1$$

$$7^x = 5^{3x-2}$$

$$9^x + 3^{x+2} - 10 = 0$$

Given the polynomial function

$$f(x) = x^4 - 2x^3 - 3x^2$$

- a) Find the x -intercepts (or zeros) and state whether the graph crosses the x -axis or touches the x -axis and turns around at each x -intercept.
- b) Find the y -intercept.
- c) Determine the symmetry of the graph.
- d) Indicate the maximum possible turning points.
- e) Graph.