

King Fahd University of Petroleum & Minerals
Dept. of Math Sciences
Math 001- 07 & 08
Class Test
April 23rd , 2005

Name : _____ ID # _____

Question	Score
1	
2	
3	
4	
5	
6	
7	
8	
9	
Total	/100

Remark :

Show all your work. No credit will be given for answers without justifications.

1) Determine whether the two equations

$$2 + \frac{9}{r-3} = \frac{3r}{r-3} \quad \text{and} \quad \frac{t}{t-4} + 3 = \frac{4}{t-4}$$

are equivalent.

2) Solve $x = \frac{y-z+1}{1 - \frac{x}{y+z}}$ for y.

3) Solve the quadratic equation $2x^2 - 3x + 9 = 0$ by completing the square.

4) Find the conjugate of $\frac{-i^{107} + 1}{(1 + i)^6}$.

5) Solve $x^3 - 1 = x^{3/2}$.

6) Solve $\sqrt{x-3} + \sqrt{x+3} = \sqrt{9-x}$.

7) Solve $x^2 \geq 4x + 3$.

8) Determine whether the following two circles intersect

$$x^2 + y^2 - 10x + 2y + 25 = 0 \quad \text{and} \quad (x - 1)^2 + (y - 2)^2 = 36.$$

9) Find all real values of x for which $\left[\frac{x^2 - x}{x + 2} \right] = 0$