

**King Fahd University of Petroleum and Minerals**  
**Mathematical Sciences Department**  
**Math 001**  
**Quiz# 1**  
**Term(031)**

**Instructor: Al-Absi, Bassam**

**27/9/2003**

**Student's Name:.....**

**ID: .....**

**SEC: ...**

1) Determine which of the numbers  $-2, -1, \frac{-1}{4}, 0, 3, 5, 6.23\dots, \sqrt{7}, 12, 1.20220222, \sqrt{16}, 2.21212121\dots$  are

(a) **Whole numbers:**

(a) **Rational numbers:**

(b) **Prime numbers:**

(c) **Irrational numbers:**

(d) **Composite numbers:**

2) Identify the property of real numbers that is illustrated by each of the following statements:

(a)  $4 + (-4) = 0$  ...by .....

(b)  $-3(x + 5y) = -3x - 15y$  ...by .....

3) Given  $A = \{2, 3, 5, 8, 9, 10\}$ ,  $B = \{x \mid x \text{ is a prime number less than } 10\}$  and  $C = \{x \mid x = 2t + 1, t \text{ is a natural number less than } 4\}$ .

(a) List all elements of  $B$

(b) List all elements of  $C$

(c) List all elements of  $(A \cap B) \cup C$ .

4) Write the expression  $|2m - 3| - |1 - 2m|$ , if  $m > 3$  without the absolute value symbols.

5) Express the statement “ $x$  is within 2 units from 4 and  $x$  is not equal to 4” using the absolute value notation.

6) Given the following inequalities, sketch their graphs and every inequality in interval notation:

(a)  $x \geq -2$  and  $x < 5$

**Graph:**

**Interval notation:**

(b)  $x > -5$  or  $x > 2$

**Graph:**

**Interval notation:**