

**King Fahd University of Petroleum and Minerals**  
**Faculty of Science – Per-Year Math Program**  
**Math 001 - Term 032**  
**Recitation hour (P.1 and P.2)**

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**Please cover at least 4 questions**

**Question1:**

For each number, check all that apply.

	Natural	Integer	Rational	Irrational	Real	Prime	Composite	Perfect Square
1								
0								
$\sqrt{3}$								
$\sqrt{4}$								
$\frac{2}{3}$								
$\frac{1}{\pi}$								
3.14								
51								
1.333...								
1.121221222...								
105								
10.5								

**Question2:**

Identify the property of real numbers or the property of equality that is illustrated in the following statements:

- 1)  $a(bc) = a(bc)$
- 2)  $a(bc) = a(cb)$
- 3) If  $x = a$  and  $a = y + 2$ , then  $x = y + 2$
- 4) If  $x = 3$  and  $y = x - a$ , then  $y = 3 - a$

### **Question3:**

Let  $A = \{x \mid x \text{ is a prime number } \leq 11\}$

$B = \{z \mid z = x + 2, \text{ where } x \text{ is an integer number with } -1 \leq x < 5\}$ .

- 1) List all elements of  $A$  and  $B$
- 2) Find  $A \cap B$

### **Question4:**

Write each of the following without absolute value symbols

a)  $|x - 3| + |x - 6|, 4 \leq x \leq 5$

b)  $\left| \frac{x}{|x| + |x + 3|} \right|, -3 < x < 0$

### **Question5:**

TRUE or FALSE

- 1)  $-\frac{1}{\pi}$  is the multiplicative inverse of  $\pi$ .
- 2) 0, 1, 2, 3, 4, ... are positive integers.
- 3) Any integer is either prime or composite.
- 4) The operation of division of real numbers is commutative.
- 5) The multiplicative inverse of  $-2\frac{2}{3}$  is  $-\frac{3}{4}$ .
- 6) If  $x$  is any real number, then  $|-x| = x$ .
- 7) If  $x$  is any real number, then  $|-x^2 - 1| = x^2 + 1$ .
- 8) If  $x < 0$ , then  $|-x| = -x$ .
- 9) The inequality  $x \leq -5$  or  $2 < x \leq 6$  can be written in interval notation as  $(-\infty, -5] \cup (2, 6]$ .
- 10) If the distance between a real number  $x$  and  $-3$  is not more than 8, then  $|x + 3| \leq 8$ .