

**King Fahd University of Petroleum and Minerals**  
**Prep-Year Math Program**  
**Math 001 - Term 061**  
**Recitation Hour (P.1)**

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**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								
1.222...								
3.121221222...								
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)  $(ab)c = a(bc)$
- 4)  $a(b - c) = ab - ac$
- 5) If  $x = a$  and  $a = y + 2$ , then  $x = y + 2$
- 6) If  $x = 4$  and  $y = x - 2a$ , then  $y = 4 - 2a$

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