

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

Question1

For each number, check all that apply.

	Natural	Integer	Rational	Irrational	Real	Prime	Composite	Perfect Square
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
$\sqrt{3}$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$\sqrt{4}$	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$\frac{2}{3}$	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$-\frac{1}{\pi}$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.14	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.222...	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.121221222...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
105	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10.5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question2

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

- 1) $a(bc) = a(bc)$ **Reflexive**
- 2) $a(bc) = a(cb)$ **commutative of multiplication**
- 3) $(ab)c = a(bc)$ **associative of multiplication**
- 4) $a(b - c) = ab - ac$ **distributive**
- 5) If $x = a$ and $a = y + 2$, then $x = y + 2$ **transitive**
- 6) If $x = 4$ and $y = x - 2a$, then $y = 4 - 2a$ **substitution**

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 $A = \{2, 3, 5, 7, 11\}$ $B = \{1, 2, 3, 4, 5, 6\}$
- 2) Find $A \cap B = \{2, 3, 5\}$

Question4

Write each of the following without absolute value symbols

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

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

Question5

TRUE or FALSE

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