Assignment II

1. Determine the truth value of each of these statements, where the domain is the set of real numbers.

1. $\exists x\ (x^2 + 1 = 0)$
2. $\forall x\ \forall y\ (x + y \neq y + x)$
3. $\forall x\ \forall y\ \exists z\ (z = \frac{x+y}{2}\ )$

Assignment II

2. Express each of these statements using predicates, quantifiers, logical connectives, and mathematical operators.

1. The set of real numbers has the density property. There is a real number between any two real numbers.
2. Express the other two cases of the $ax^2 + bx + c = 0$ where it has one repeated root, and no real roots at all.

Assignment II

3. Let F(x, y) be the statement “x can fool y,” where the domain consists of all people in the world. Use quantifiers to express each of these statements.

1. Everybody can fool Yassir.
2. There’s somebody who can fool exactly two people.
3. There is exactly one person whom everybody can fool.

Assignment II

- The submission deadline is: **Saturday, June 8th 2024, 23:59:59 GMT+2.**
- Upload a clearly captured photocopy of your answer-sheet to: https://forms.gle/zKwBG7oeinWdncw4A
- In cases of cheating, the student will suspect themselves to **strict** cheating penalties.