

MAT 119
Quiz #1
1 September 2005

Name: _____

Key

You may not use your notes. Please show all of your work. An answer without justification will receive little credit.

- (1) Give a definition of what it means for an integer to be a square. For example 1, 4, 9, 16, 25 are squares.

Definition: An integer x is a square provided there is another integer y such that $x = y \times y$.

(5)

- (2) Prove the following statement. If x is an even integer then $x + 1$ is odd.

Suppose that $x \in \mathbb{Z}$ is even.

Then there is $c \in \mathbb{Z}$ such that

$$x = 2c$$

$$\Rightarrow x + 1 = 2c + 1$$

Thus $x + 1$ is odd

(5)

(1)

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