Skill Mastery Quiz 3

Communicating in Math (MTH 210-01)
Winter 2020

Name:

L1-3 Consider the following conditional statement:

If p is a prime number then $p = 2$ or p is an odd number.

Identify the hypothesis and the conclusion of the conditional satement.

Assume the above conditional statement is true. Assuming *only* the conditional statement and that a given p is odd what can you conclude (if anything)? Explain your answer.

L2-3 State the definition of even integer precisely:

An integer n is even provided that...

Outline a proof that if $x, y \in \mathbb{Z}$ are even integers then xy is even. (Make sure to include key details - like what things are integers.)

L3-2 Construct a truth table for $P \implies (Q \wedge R)$.

L4-2 Describe what the set $\{x \in \mathbb{R} \mid 3 \leq x \leq 5\}$ is in words. Then write what the set is in roster notation or explain why you can not.

L5-1 Write a useful negation of the following statement:

$$\text{There exists } x \in \mathbb{Z} \text{ such that if } y \in \mathbb{Z} \text{ then } \frac{y}{x} \in \mathbb{Z}.$$

Useful negations don't start with "It is not true that..." and avoid the word not in cases where it could be replaced (e.g., don't use "not even").