# Skill Mastery Quiz 5

Communicating in Math (MTH 210-01)

Winter 2020

Name:

L5-3  Write a useful negation of the following statement:

For all integers $n$ and $m$, if $nm$ is even then $n$ is even or $m$ is even.

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").

P3-1  The following statement is incorrect:

The set of natural numbers is closed under subtraction.

Show the statement is false using a counterexample. You should clearly explain why the counterexample you found shows the statement is false.

P1-1 Consider the following statement:

If $n$ is even integer greater than 2 then $n$ can be expressed as the sum of two prime numbers.

State what you would assume in a direct proof.

State what you would assume in a proof by contradiction.