

Skill Mastery Quiz 7
Communicating in Math (MTH 210-01)
Winter 2020

Name:

P1-3 Consider the following statement:

For all integers a and b , if $a \neq 0$ and a does not divide b , then $ax^3 + bx + (b + a) = 0$ does not have a solution that is a natural number.

State what you would assume in a direct proof.

State what you would assume in a proof by contradiction.

P2-1 For which of the following situations is it more appropriate to use induction. Explain.

1. For all $a \in \mathbb{Z}$ the equation $ax^3 + ax + a = 0$ does not have a solution that is a natural number.
2. For each natural number n , 3 divides $4^n - 1$.

Circle one and explain why you chose that.

For the statement you chose, state what your steps would be in a proof by induction.