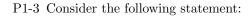
$\begin{array}{c} \textbf{Skill Mastery Quiz 7} \\ \textbf{Communicating in Math (MTH 210-01)} \end{array}$

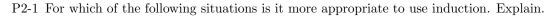
	Winter 2020
27	
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For all integers a and b, if $a \neq 0$ and a does not divide b, then $ax^3 + bx + (b+a) = 0$ does not have a solution that is a natural number.

State what you would assume in a direct proof.

State what you would assume in a proof by contradiction.



- 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.