Math 235 - Dr. Miller - Discussion/Participation #2 - Spring 2025

In our course, a proof "launch" is the start of a proof up to one meaningful sentence beyond the NTS. I have given several PARTIAL launches below (I am purposely leaving out the NTS or other info sometimes). For each, tell which proof style is being attempted. It's possible that a launch is NOT correct for any style, in which case, just write "NONE."

1. Prop. - Suppose a, b, and c are integers. If a divides b or a divides c, then a divides $b + c$.

   "Proof." Suppose a, b, and c are integers.
   Suppose a divides b or a divides c.
   (NTS: ???)
   Assume a divides b. ...

2. Prop. - Suppose a, b, and c are integers. If a divides $b + c$, then a divides b or a divides c.

   "Proof." Suppose a, b, and c are integers.
   Suppose a divides $b + c$ and a doesn't divide c.
   (NTS: ???)
   Then for some integer q, $b + c = aq$. ...

3. Suppose a, b, and c are integers. If a divides both b and c, then a divides $b + c$.

   "Proof." Suppose a, b, and c are integers.
   Assume that a does not divide $b + c$.
   (NTS: ???)
   Then $ak \neq b + c$ for any integer k. ...

4. Prop. - Suppose m is an integer. If m^2 is odd, then m is odd.

   "Proof." Suppose m is an integer.
   Assume m is odd.
   (NTS: if m^2 is odd, then m is odd.)
   Then $m = 2k + 1$ for some integer k. ...

5. Prop. - Suppose m is an integer. If m^2 is odd, then m is odd.

   "Proof." Suppose m is an integer.
   Assume m is even.
   (NTS: ???)
   The $m = 2k$ for some integer k. ...