Handout $4\frac{31}{32}$

The Ponis Claims To Think About Which May Be of Use for Basic Analytic, Number Theoretic, or Algebraic Proofs

Dr. M. P. M. M. M^{c}Loughlin

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Let our universe be $\mathbb{R}$.

Claim P.1: $\forall\ x \in \mathbb{R}, y \in \mathbb{R}, z \in \mathbb{R}$, it is the case that $x \neq y \Longrightarrow x + z \neq y + z$.

Claim P.2: $\forall\ x \in \mathbb{R}, y \in \mathbb{R}, z \in \mathbb{R}$, it is the case that $(xz < yz) \Longrightarrow ((x < y) \wedge (z > 0))$.

Claim P.3: $\forall\ x \in \mathbb{R}, y \in \mathbb{R}, z \in \mathbb{R}$, it is the case that $(xz < yz) \Longrightarrow (((x < y) \wedge (z < 0)) \vee ((x > y) \wedge (z < 0)))$.

Claim P.4[1]: $x \in \mathbb{N} \wedge y \in \mathbb{N} \Longrightarrow (x - y) \in \mathbb{N}$.

Claim P.5[2]: $x \in \mathbb{N} \wedge y \in \mathbb{N} \Longrightarrow \neg\left((x - y) \in \mathbb{N}\right)$.

Claim P.5: $x \in \mathbb{N} \wedge y \in \mathbb{N} \Longrightarrow (x - y) \notin \mathbb{N}$.

The challenge: Try to prove or disprove these claims.

These were claimed (devised or thought of) by Mr. Ponis who is in the 2 P.M. MWF class. They are fun.

[1]We prove this false in the 2 P.M. MWF class.
[2]This is poorly written.