Chapter 3 Formal Proofs

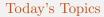
Bahar Aameri

Department of Computer Science University of Toronto

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Mathematical Expression and Reasoning

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• Exercise: Formal Proofs

Direct Proof of the Existential

Exercises

Use the proof structures in this course to **prove** or **disprove** the following claims

- **③** For all quadruples of **positive** real numbers w, x, y, z. If w/x < y/z then:

$$\left(\frac{w}{x} < \frac{w+y}{x+z}\right) \land \left(\frac{w+y}{x+z} < \frac{y}{z}\right)$$

● For every pair of positive natural numbers (m, n), if m ≥ n, then the gcd(m, n) = gcd(n, m - n).
Note: gcd(m, n) denotes "greatest common divisor of m and n." The largest positive integer that divides both m and n.