(1) Results from today’s class:
   (a) Let \(a, b, c, d, n \in \mathbb{Z}\) with \(n \geq 2\). if \(a \equiv b \pmod{n}\) and \(c \equiv d \pmod{n}\), then \(ac \equiv bd \pmod{n}\).
   (b) Let \(n\) be an integer. If \(n^2 \neq n \pmod{3}\), then \(n \neq 0 \pmod{3}\) and \(n \neq 1 \pmod{3}\).

(2) Facts about the real numbers \(x, y\) and \(z\) that we’ll use without proof:
   (a) \(x^2 \geq 0\) for all \(x \in \mathbb{R}\)
   (b) If \(x > y\) and \(z > 0\), then \(xz > yz\) and \(\frac{x}{z} > \frac{y}{z}\).
   (c) If \(x > y\) and \(z < 0\), then \(xz < yz\) and \(\frac{x}{z} < \frac{y}{z}\).
   (d) If \(xy = 0\), then \(x = 0\) or \(y = 0\).
   (e) If \(x, y > 0\), then \(x + y > 0\) and \(xy > 0\).
   (f) If \(x, y < 0\), then \(x + y < 0\) and \(xy > 0\).
   (g) If \(x > 0\) and \(y < 0\), then \(xy < 0\).

(3) More results from today’s class:
   (a) If \(x \in \mathbb{R}\) and \(x^3 - 5x^2 + 3x = 15\), then \(x = 5\).
   (b) If \(x, y \in \mathbb{R}\), then \(\frac{1}{3}x^2 + \frac{3}{4}y^2 \geq xy\).
   (c) **(Triangle Inequality)** If \(x, y \in \mathbb{R}\), then \(|x + y| \leq |x| + |y|\).

(4) You have a hand-in homework assignment due tomorrow. We’ll meet at **11:00am** tomorrow in Lexington Coffee Shop.