Congruence as an equivalence relation

- Read carefully pages 202 through 207 (section 8.5)
- Some key questions to answer:

  1. When do we say that two numbers a, b are congruent modulo n?
  2. Show that for any natural number $n \geq 2$, congruence modulo n defines an equivalence relation on $\mathbb{R}$. This is a really important proof.
  3. What happens when $n = 1$? Describe what congruence modulo 1 would mean.
  4. Explain in simple terms what congruence modulo 2 means. We have already worked with the more straightforward explanation of it.
  5. Define a relation R on $\mathbb{Z}$ by saying that aRb if and only if $2a + b$ is congruent to 0 modulo 3. Show that this is an equivalence relation.

- Practice problems from section 8.5 (page 213): 8.45, 8.46, 8.49