Ratios and Rates

- Ratios must be in the same terms.
  **Example:** 5 miles to 8 miles
  Notice that “feet to inches” can be made into a ratio by changing the feet into inches. (These are in a conversion chart in your book in section 5.1.)
  **Example:** 2 feet to 9 inches ⇒ 24 inches to 9 inches
  A ratio of 3 to 7 can be written several different ways:
  1) 3 : 7
  2) \( \frac{3}{7} \)
  3) 3 to 7

- Rates have different terms that cannot be made into the same terms.
  **Example:** 4 books to 2 people (Notice that we cannot change books into people! This is not Hogwarts! 😊)
  We **must** label rates!!

  1) 5 miles to 8 miles ⇒ \( \frac{5 \text{ miles}}{8 \text{ miles}} = \frac{5}{8} \) or 5 : 8 or 5 to 8

  2) 2 feet to 9 inches ⇒ 24 inches to 9 inches ⇒
     \( \frac{24 \text{ in.}}{9 \text{ in.}} = \frac{24}{9} = \frac{8}{3} \) or 8 : 3 or 8 to 3

  3) 4 books to 2 people ⇒ \( \frac{4 \text{ books}}{2 \text{ people}} = \frac{2 \text{ books}}{1 \text{ person}} \) or 2 books per person

  4) 2 books to 4 people ⇒ \( \frac{2 \text{ books}}{4 \text{ people}} = \frac{1 \text{ book}}{2 \text{ person}} \) or 1 book per 2 people

**Notice the difference between #3 and #4!**