

What is a
RATIO?

- A Comparison of 2 or more quantities
- Ways to represent a ratio: $a:b$; $\frac{a}{b}$; a
- Ratios can be Simplified!

Example:

A store has 40 trumpets, 39 clarinets, 51 flutes, and 24 violins in stock. Give simplified ratios.

1. Trumpets to violins.

$$\frac{40}{24} = \frac{5}{3} \quad 5:3$$

5 to 3

2. Flutes to clarinets.

$$\frac{51}{39} = \frac{17}{13}$$

3. Trombones to trumpets.

$$\frac{16}{40} = \frac{2}{5} \quad 2:5$$

4. Violins to total instruments

$$\frac{24}{170} = \frac{12}{85}$$

EXTENDED
RATIOS

- A Comparison of 3 or more quantities
- Extended ratios are written as $a:b:c$.

5. The ratio of two complementary angles is 3:7. *Ratio*
Find the measures of both angles.

$$a + b = 90$$

$$3 + 7 \neq 90$$

$$3 \cdot 2 + 7 \cdot 2$$

$$6 + 14 \neq 90$$

$$3 \cdot 3 + 7 \cdot 3$$

$$9 + 21 \neq 90$$

$$3x + 7x = 90$$

$$\frac{10x = 90}{10 \quad 10}$$

$$x = 9$$

$$3(9) = 27^\circ$$

$$7(9) = 63^\circ$$

6. The ratio of two supplementary angles is 4:1. *Ratio*
Find the measures of both angles.

$$a + b = 180^\circ$$

$$4x + x = 180$$

$$\frac{5x = 180}{5 \quad 5}$$

$$x = 36$$

$$x = 36$$

$$4(36) = 144^\circ$$

$$1(36) = 36^\circ$$