Dimensional Analysis

- 1. Given 1 foot (ft) is about 30.5 centimeters (cm):
 - (a) convert 5 ft and 4 inches into cm
 - (b) convert 1 meter and 25cm into ft
 - (c) convert 2 cubic feet into cm^3

2. If a raindrop's mass is 65mg on average and 5.1×10^5 raindrops fall on a lawn every minute, what mass in (kg) of rain falls on the lawn in 1 hour and 15 minutes?

Variation

3. Suppose y varies directly as x. If y = 6 when x = 30, find y when x = 120.

- 4. The intensity (I) of light varies inversely as the square of the distance (d) from the light source.
 - (a) If I = 4 when d = 3, what is d when I = 7?

(b) If a person doubles her/his distance from a lamp, what happens to the intensity of the light at her new location?