## MTH/5L5-218

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OFFice hours: Zoom Monday: 4:30 pm - 5:30 pm

Wednesday: 11:10AM - 12:10PM

Everything will Stay the Same! 's

\$11.4 Converting one unit to Another.

$$1hour = 60 min.$$
 $1 min = 60 SeC$ 
 $1 kg = 2.21bs$ 
 $3 kg \stackrel{?}{=} 3(2.21bs) = 6.61b5$ 

Example

I meter = feet?

$$1 \cdot 100 \cdot \frac{1}{2.54} \cdot \frac{1}{12} = 3.280837....ft.$$

This Chain Process is known as Dimensional Analysis

- 1. A class needs a 175-inch long piece of rope for a project. How long is the rope in yards?
  - a. Use multiplication or division or both to solve the rope problem. Explain your solution.
  - b. Describe a number of different correct ways to write the answer to the rope problem. Explain briefly why these different ways of writing the answer mean the same thing.

1 Yard = 3 ft., 1 ft = 12 in.

we have 175 in.

Dimensional Analysis.

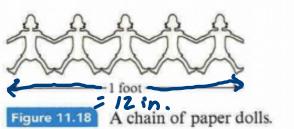
175 K \* 1 ft. \* 14d 3 ft

36 4 R31 36 1775 -144 -14

(a) 100 dolls.

\* 100 dolls = 20 ft. 5 dolls

- a. 100 dolls
- b. 1000 dolls
- c. 10,000 dolls
- d. 100,000 dolls
- e. 1 million dolls
- f. 1 billion dolls
- 2. The children in Mrs. Watson's class made chains of small paper dolls, as pictured in Figure 11.18. A chain of 5 dolls is 1 foot long. How long would the following chains of dolls be? In each case, give your answer in either feet or miles, depending on which answer is easiest to understand.



b) 1000 do.115

\* 1000 dotts = 1000.20 ft
100 dotts

1 mile = 5280ft

= 200 ft Toodolls = 200 ft

$$*loodolts* = 1 + t = looft = Ooft$$

100 dolls = 20ft

- **b.** If the speed limit is 70 miles per hour, what is it in kilometers per hour?
- c. Some farmland covers 2.4 square kilometers. How many square miles is it?
- d. Convert the volume of a compost pile, 1 cubic yard, to cubic meters.
- e. A man is 1.88 meters tall. How tall is he in feet?
- f. How many miles is a 10-kilometer race?

$$C$$
 2.4  $Km_{\times 100}^2$   $m:_{2.5}^2$   
 $1 \text{ km} = 1000 \text{ m} = 100,000 \text{ cm} = 39370 \text{ in}$   
 $= 3280 \text{ ft} = 0.621 \text{ miles}$ 

2.4 Km<sup>2</sup> \* 
$$\left(\frac{-621 \text{mi}}{1 \text{ Km}}\right)^2$$
  
2.4 Km<sup>2</sup> x  $\frac{-39 \text{ mi}^2}{1 \text{ km}^2} = 2.4 \times .39 = \boxed{.9 \text{mi}^2}$ 

e. A man is 1.88 meters tall. How tall is he in feet?