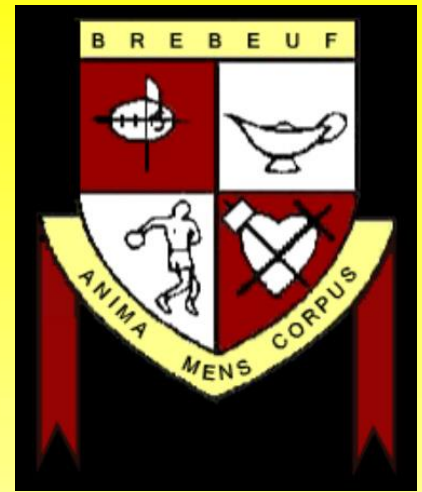


# ST. JEAN DE BREBEUF MATHEMATICS



## CHAPTER 1.1

IMPERIAL

MEASURE

# CHAPTER 1.1 IMPERIAL MEASURE

## KEY CONCEPTS

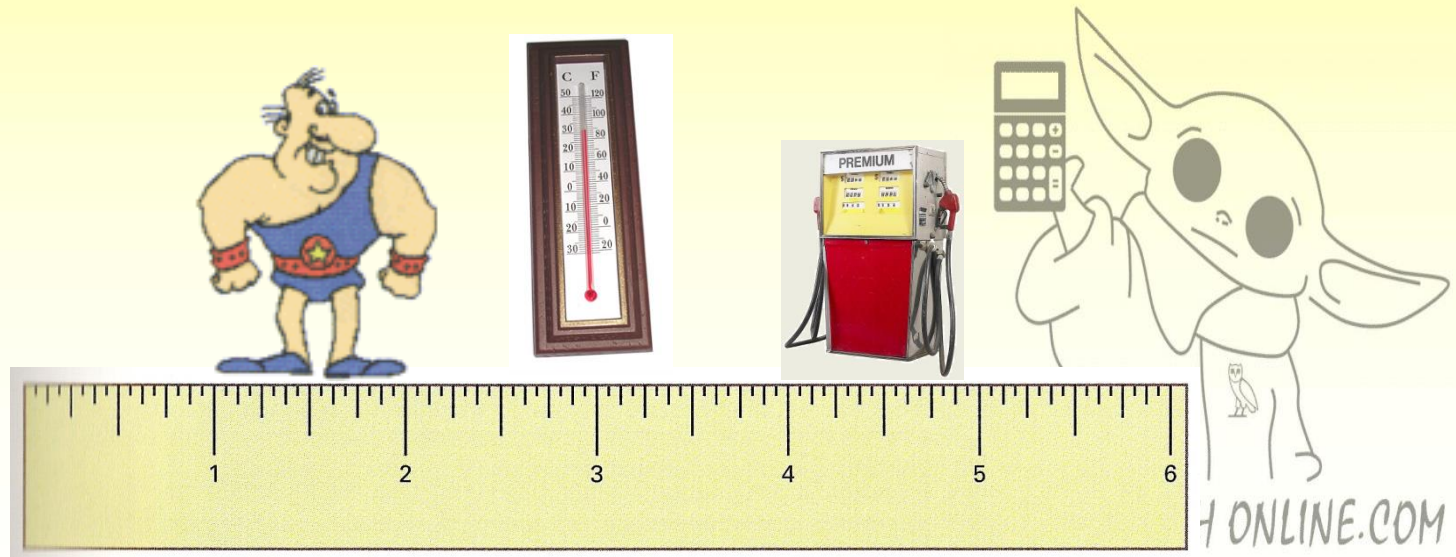
Some of the basic units of imperial measure are listed below:

**Length and distance:** foot, inch, yard, miles

**Mass and weight:** pounds, ounces and Tonnes

**Volume and capacity:** *fluid* ounces, cups, gallons and pints

**Temperature:** Fahrenheit



# CHAPTER 1.1 IMPERIAL MEASURE

There are fixed relationships among the different units for length, volume, and weight. A conversion chart is listed below.

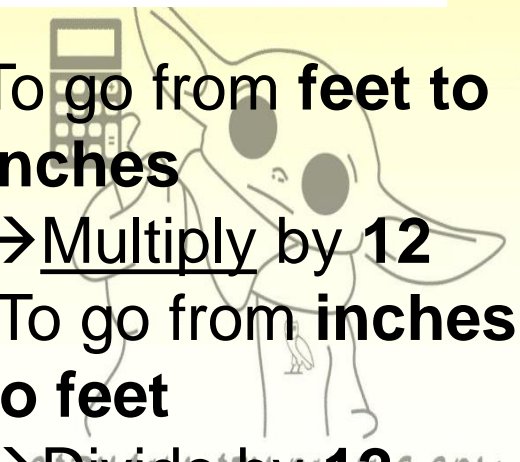
LENGTH	MASS	VOLUME
1 ft (foot) = 12 in (inches)	1 lb (pound) = 16 oz (ounces)	1 gal (gallon) = 4 qt (quart) = 8 pt (pints) = 128 fl oz (fluid ounces)
1 yd. (yard) = 3 ft (feet)	1 T (Tonne) = 2000 lbs (pounds)	1 qt (quart) = 2 pt (pints)
1 mi (miles) = 1 760 yd (yards)		1 pint (pt) = 16 fl oz (fluid ounces)
		1 c (cup) = 8 fl oz (fluid ounces)

**HOW TO USE THE CHART (for all conversions)**

$$\begin{array}{c} \times 12 \\ \curvearrowright \\ 1 \text{ foot} = 12 \text{ inches} \\ \curvearrowleft \\ \div 12 \end{array}$$

To go from **feet to inches**  
→ Multiply by 12

To go from **inches to feet**  
→ Divide by 12



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## EXAMPLE 1 Basic Imperial Conversion

Convert the following units of measure

(a) **3 feet to inches**

Multiply by 12

$$= 3 \text{ ft} \times 12$$

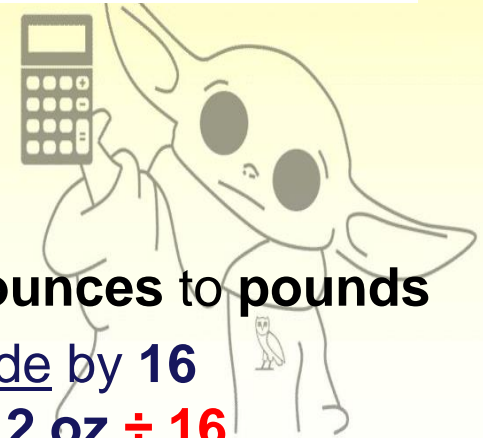
$$= 36 \text{ in}$$

(b) **112 ounces to pounds**

Divide by 16

$$= 112 \text{ oz} \div 16$$

$$= 7 \text{ lbs}$$



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## EXAMPLE 1 Basic Imperial Conversion

Convert the following units of measure

(c) **25 gallons to fluid ounces**

Multiply by 128

$$= 25 \text{ gal} \times 128$$

$$= 3200 \text{ fl oz}$$

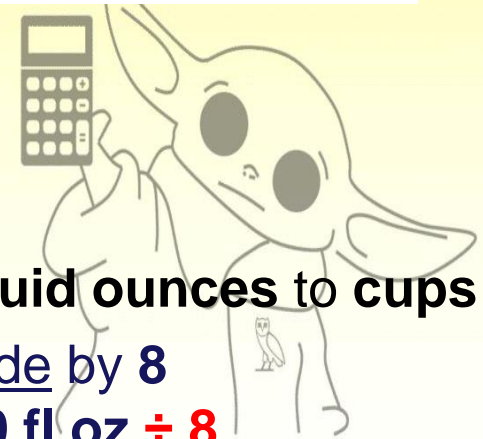
(d)

**80 fluid ounces to cups**

Divide by 8

$$= 80 \text{ fl oz} \div 8$$

$$= 10 \text{ c}$$



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## EXAMPLE 1 Basic Imperial Conversion

Convert the following units of measure

(e) **0.025 Tonnes to ounces**

This requires two conversions

Step 1: Convert **Tonnes to pounds**

→ Multiply by **2000**

$$= 0.025 \text{ T} \times 2000$$

$$= 50 \text{ lbs.}$$

Step 2: Convert **pounds to ounces**

→ Multiply by **16**

$$= 50 \text{ lbs} \times 16$$

$$= 800 \text{ oz}$$



# CHAPTER 1.1 IMPERIAL MEASURE

## EXAMPLE 2 Working With Volume

Sebastian owns a resto-bar in Woodbridge. He bought a **66 gallon** drum of mayonnaise from Costco. He needs to fill **pint size** bottles with the mayonnaise from the drum.

How many bottles will Sebastian fill?

We need to convert **66 gallons** to **pints**

→ From conversion chart **1 gallon = 8 pints**

→ Multiply by **8**

$$= 66 \text{ gallons} \times 8$$

$$= \mathbf{528 \text{ pints}}$$

Sebastian can fill **528 pint bottles** with mayonnaise.



CONVERSIONS

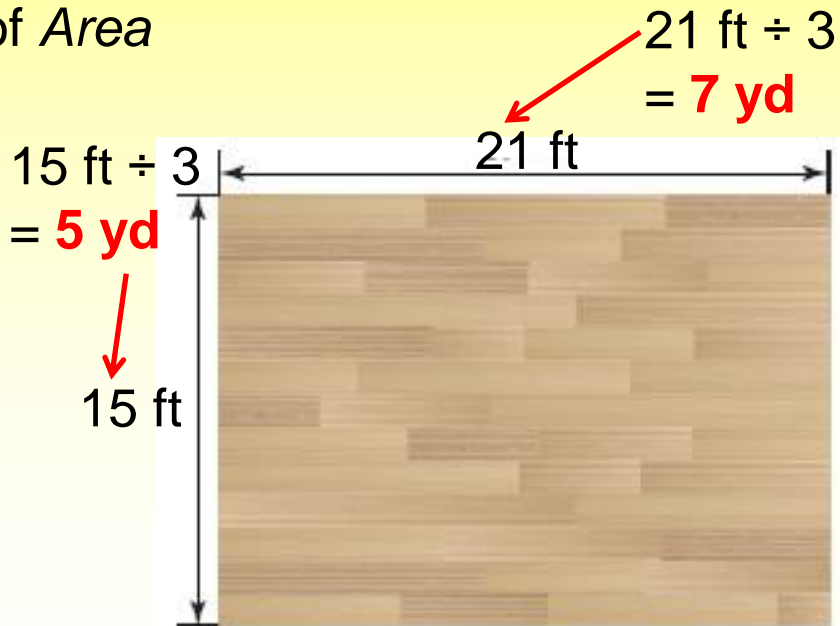
# CHAPTER 1.1 IMPERIAL MEASURE

## EXAMPLE 3

### Finding the Cost to Carpet a Room

Calculate the cost to carpet the floor shown. The carpet costs **\$25 per square yard**.

Note: **Square yard (or  $\text{yd}^2$ )** is a unit of Area



Step 1: Convert the measurement from **feet** to **yards**

$$\rightarrow 1 \text{ yard} = 3 \text{ feet}$$

→ Divide by 3

Step 2: Use the new measurements and find the area

$$\begin{aligned} \text{Area} &= \text{length} \times \text{width} \\ &= 7 \text{ yd} \times 5 \text{ yd} \\ &= \mathbf{35 \text{ yd}^2} \end{aligned}$$

Step 3: Find the cost

$$\begin{aligned} \text{Cost} &= \text{Price} \times \text{Area} \\ &= \$25 \times 35 \text{ yd}^2 \\ &= \mathbf{\$875} \end{aligned}$$

It would cost **\$875** to carpet this floor.

CONVERSIONS



# CHAPTER 1.1 IMPERIAL MEASURE

## Homework:

Page 9 – 11

#2 – 6, 11, 12 and

Question #1 on

Assignment



# CHAPTER 1.1 IMPERIAL MEASURE

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PREVIOUS