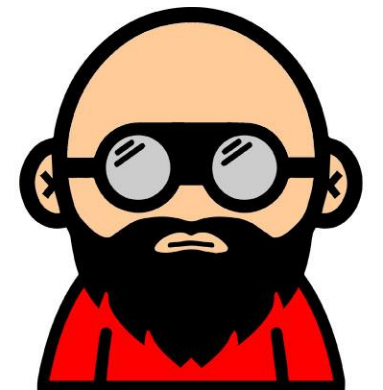


# Shop floor plan

Valleyview Metal shop

Mr. Holbrook



- **Purpose:** This activity introduces measurement, scale, and drawing in order to represent an object(s) or room. This will help as we progress in the course and need to read or create our plans, designs, and procedures.

**Assignment:**

Draw the entire room including "footprints" of machines, tables, tool boards, etc. You do not need to include loose items such as the location of my coffee mug or garbage cans.

You should include the location of safety equipment such as fire extinguishers, fire alarms, big red power buttons, etc.

You will be graded on accuracy, and how clean your drawing looks.

- We will be drawing out a map of the room and where tools, machines, tables, etc, is located in the metal shop. This will help you find your way around and learn where to find everything we need over the course of the semester.

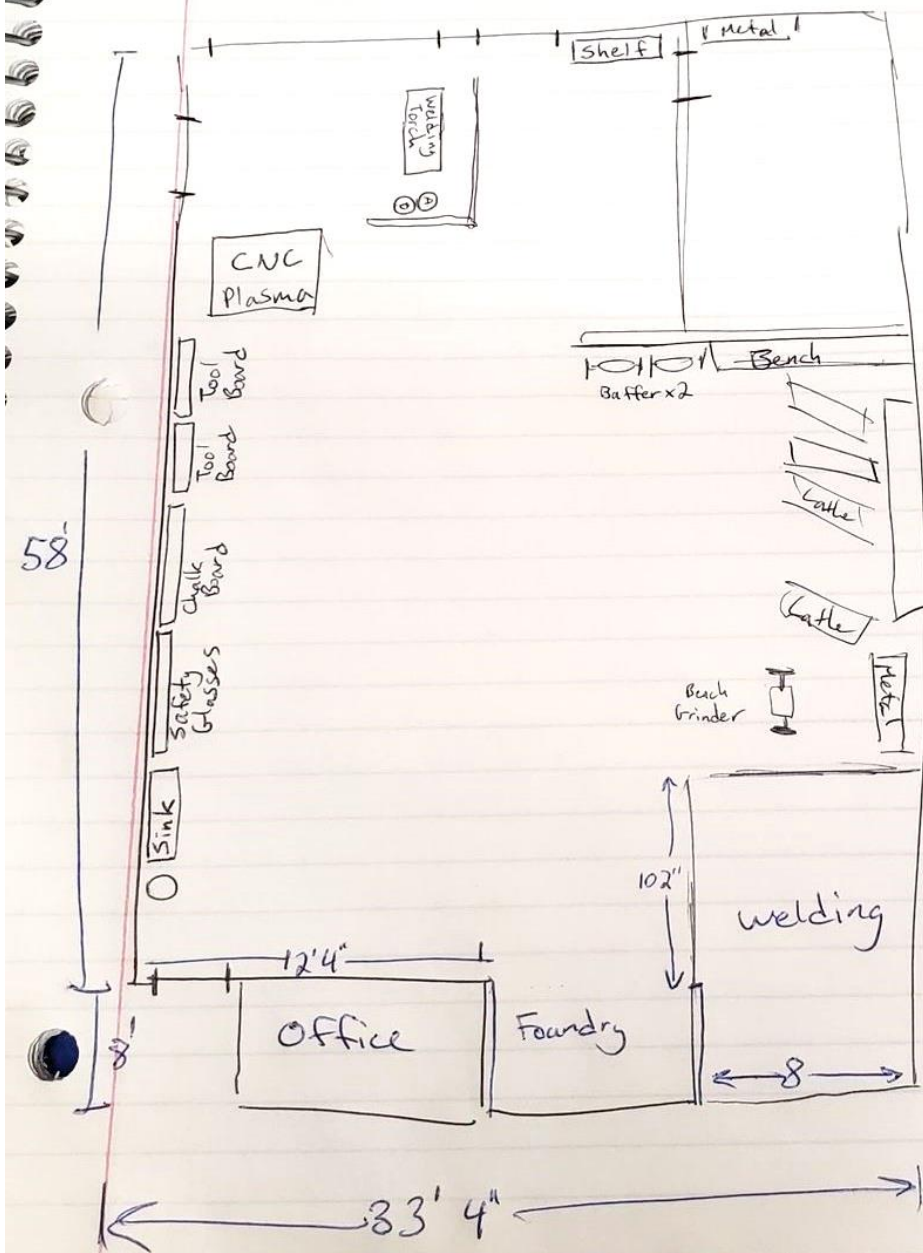
We will be drawing to scale and should be working in table groups. Each student will be handing in their own drawing.

Since we cannot draw a full size version of the room we need to draw a scale version that has been shrunk down to fit on our paper.

The metal shop room if drawn as a rectangle is approximately **400 inches wide** by **792 inches long**.

# Shop Floor Plan

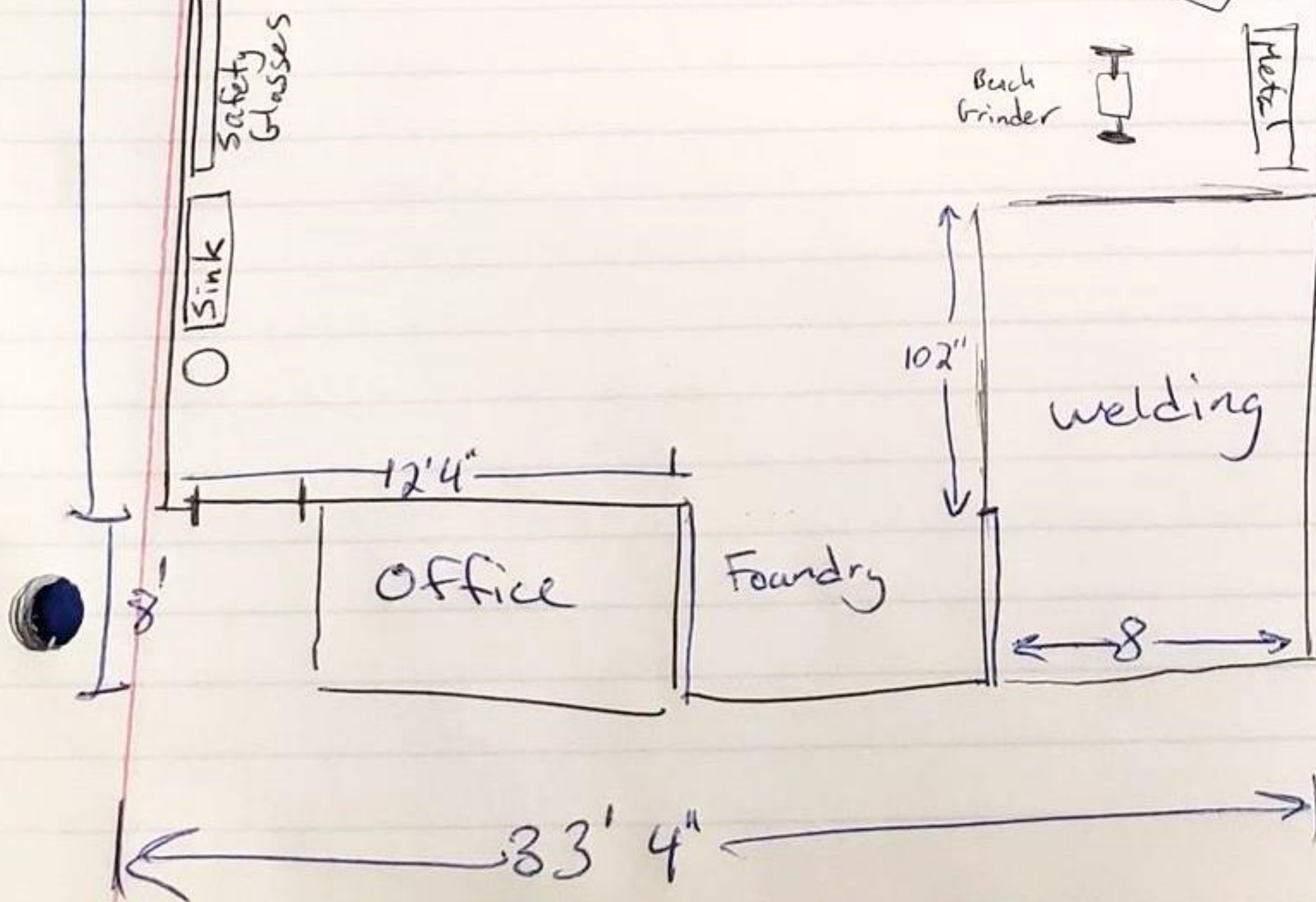
- legend
- notes
- scale.



- Legend:
- ① Lathe
  - ② Bench Grinder
  - ③ Plasma CNC
  - ④
  - ⑤

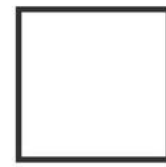
$$792 = \frac{400}{17} = 9$$

100  
PORTABLE  
PORTABLE  
100

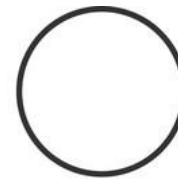


792  
 =  
~~858~~  
 17 4

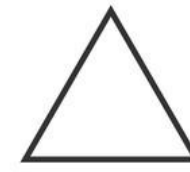
- “Footprints” do not have to look exactly like the thing they are representing.
- We want to know where they are and what they are.
- I will draw most things represented by a simple shape like circles, rectangles, triangles, etc



SQUARE



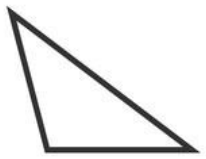
CIRCLE



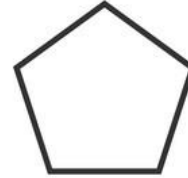
TRIANGLE



RECTANGLE



SCALENE



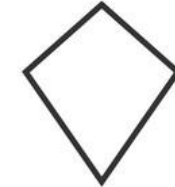
PENTAGON



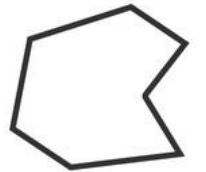
RIGHT



TRAPEZE



KITE



POLYGON



PARALLELOGRAM



ELLIPSE



TREFOIL



STAR



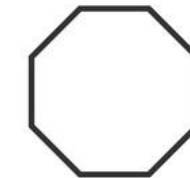
SEMICIRCLE



HEXAGON



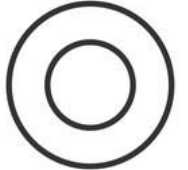
CRESCENT



OCTAGON



CROSS



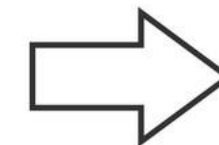
RING



PIC



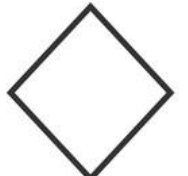
HEART



ARROW



QUATREFOIL



RHOMBUS



# Scale drawings and plans



*The Derek Zoolander Center for Kids Who Can't Read Good and Who Want To Learn to Do Other Stuff Good Too*

<https://youtu.be/NQ-8luUkJJc?t=60>

# SCALE

- We will be drawing an above view plan of the room on a piece of paper that is **11 inches** by **17 inches**.

This means that if an object has a foot print of **22" x 63"** (the sink by the shop entrance) you have to draw it **.47 inches x 1.35"** in order to fit on the paper

How did I get that number? I divided the full size number of 22 by 46.6 to get a final number of .47" ( $22" / 46.6 = .47"$ )

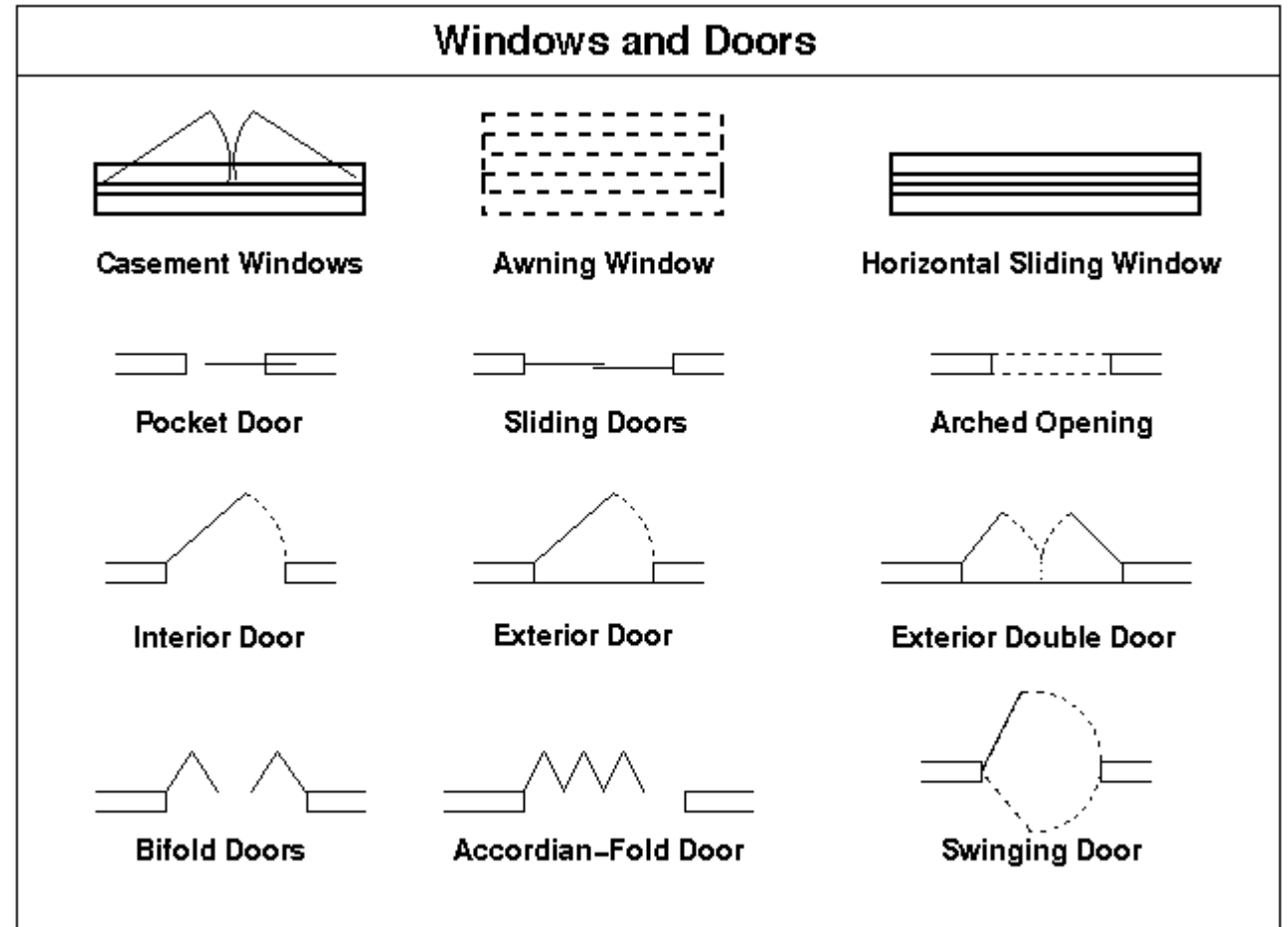
**So basically if measuring in inches you should divide the number by 46.6 to get the measurement you will draw.**



- On my paper I would figure out where on the page to draw it and put a label on it saying what it is. You can round up or down for the drawing size but we should try to get it close.

DRAW LIGHTLY IN PENCIL FIRST. Use a straight edge or ruler. Use the geometry set. Our goal is to draw a nicely scaled. You do not need to add measurements to your final drawing but you should have a page of notes or quick sketch of sizes and how big things will be so you can draw them onto your final map at an appropriate scale.

- This is one way of how to represent doors and windows.
- In my sketch you can see that I represented doors with 2 small lines intersecting the wall showing how wide the door is.
- The main shop door is 36 inches wide so we would draw it 0.77" wide



# What should we add to the legend?

- Names of stuff in the room:
- Milling machine
- Lathe
- Mig Welder
- Drill Press
- Bench Grinder
- Buffing Wheel
- CNC Plasma Cutter
- Oxy-Acetylene Welder
- Burn out Kiln
- Spin Caster
- Foundry
- Toolboard
- Sink
- Eye wash station
- Fire Extinguisher
- Emergency Power Button
- Belt Sander
- Foot Shear
- Beverly Shear
- Brake
- Slip Form Roller
- Metal Racks
- Safety Glasses
- Laptop Cart

# These numbers with decimals and fractions hurt my brain

- Round them to the nearest line on your ruler. If the measurement is 36 inches wide and the drawing is 0.77 inches wide that can be tricky to draw and understand what line to look at.
- This is where the metric system can be easier for most people. Including MOST OF THE WORLD!
- Practice, Practice, Practice



# You may use either imperial or metric

- Between your table group choose which type of measurement you want to use.
- Imperial room size: 400 inches by 792 inches
  - On paper we can draw the room as 9 inches x 17 inches
  - Divide full size inches by 46 to get the scaled size
- Metric Room size: 1016 cm by 2011 cm
  - On paper we can draw the room as 22cm x 43cm
  - Divide full size cm by 46 to get the scaled size

# So we have the assignment.... Now what?

- Before I expect you to know how to read measuring tools we should practice a bit of basic measurement.
- Worksheet time!!
  - Imperial and metric