How to Read a
Ruler / Measuring Tape / Steel Scale

Thankfully measuring isn't as hard as it may first appear!
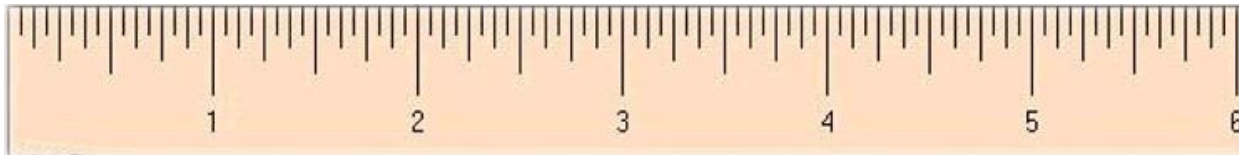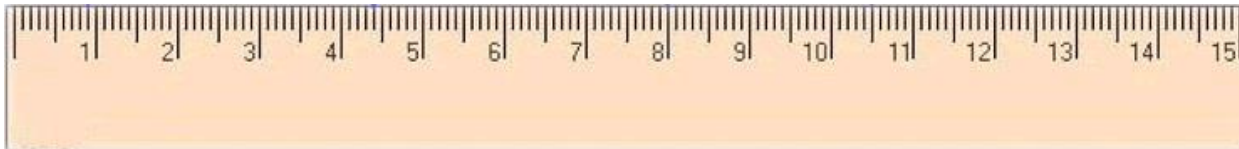
Three proven steps to success

Step 1 - Determine the system to be used…

Step 2 - establish units

Step 3 - Count your way to the correct measurement

The ground rules…

Step 1. - Determine the system to be used…

Is the scale you are using Metric or Imperial?

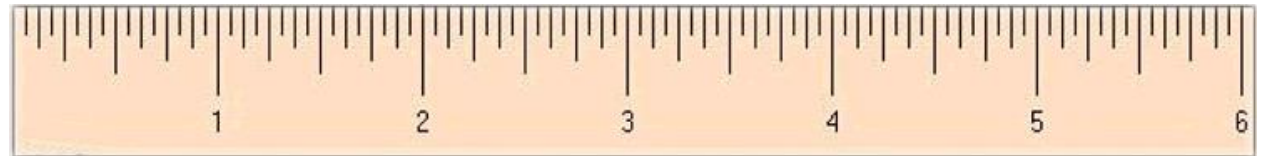**Step 1. cont'd...**

Metric
(based on ten)

Imperial
(not based on ten)
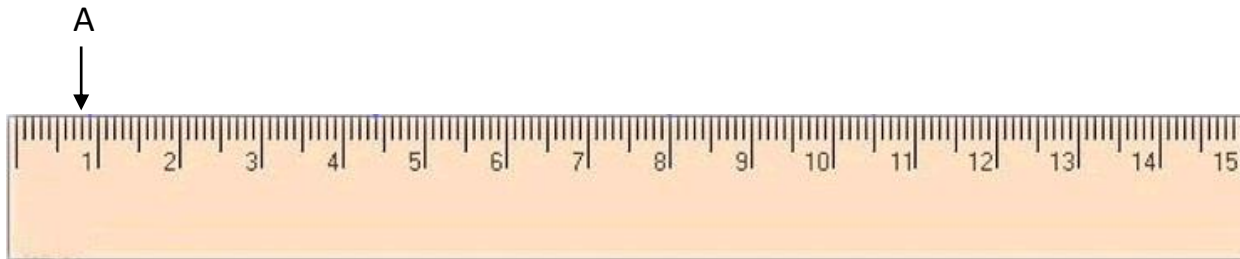
Step 2   - establish units

Metric - millimeters (mm)
                 Centimeters (cm)

10 mm = 1 cm

Imperial - inches (") & portions of inches (fractions)

Measuring - Metric

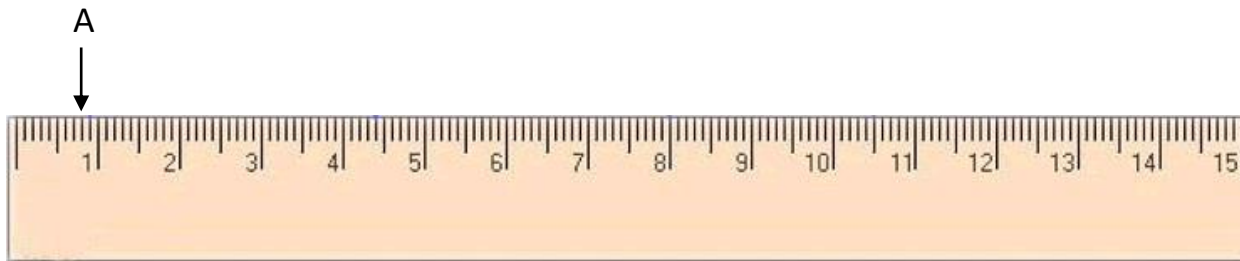## Step 3- count your way to the correct measurement (metric)

A

Have a look at "A".

The simplest way to determine the measurement is to count the individual lines.

Doing this we arrive at 8.

Since each individual line represents a mm, the measurement is then 8 mm
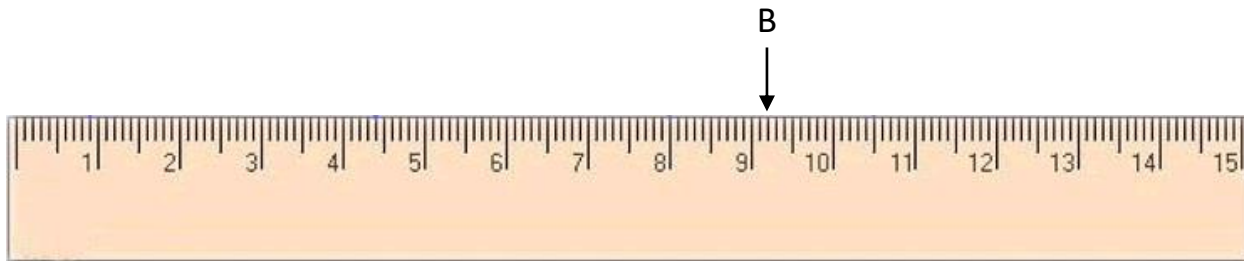
Step 3 cont'd…

A

Notice also that the line half way between zero and one is a bit longer.

This helps to speed up your count as you can easily count half of 10, or 5, and then add or subtract the necessary number of lines on either side.
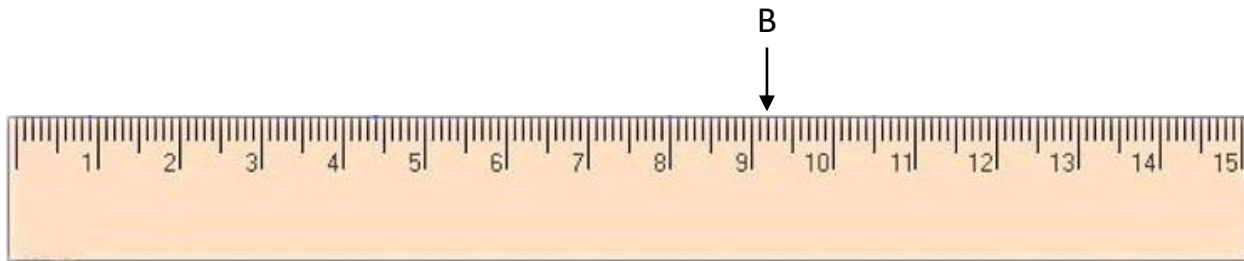
Step 3 cont'd...

B

Now for "B"

You could count all of the lines leading to B, but that would take a while.

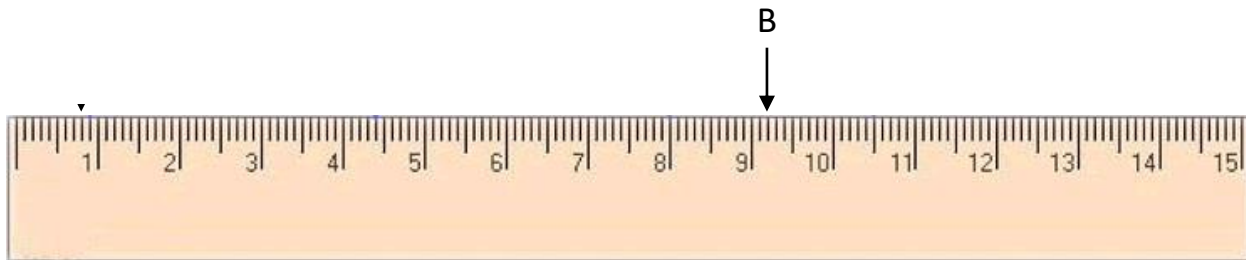It's quicker to count to 9 and then add what's left.

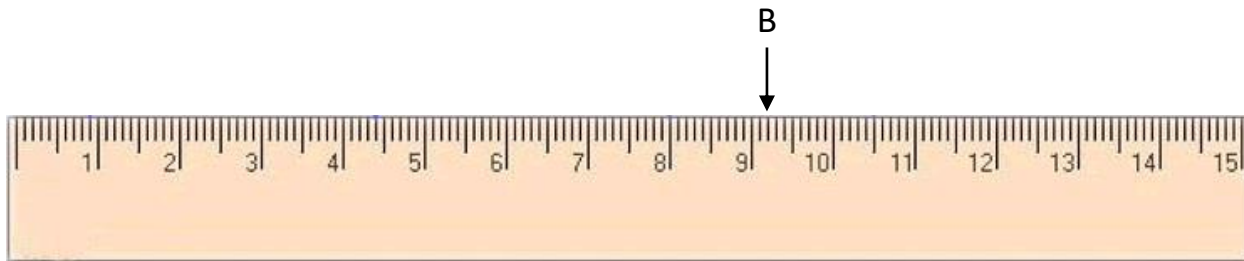Step 3 cont'd...

B

What does the 9 mean?

9 units of 10

Step 3   - count your way to the correct measurement

B

…and this can be read as 90 mm (9 x 10 mm), then we just add two more.

Step 3 cont'd...

B

If you'd rather use centimeters...

9 cm plus 2 mm
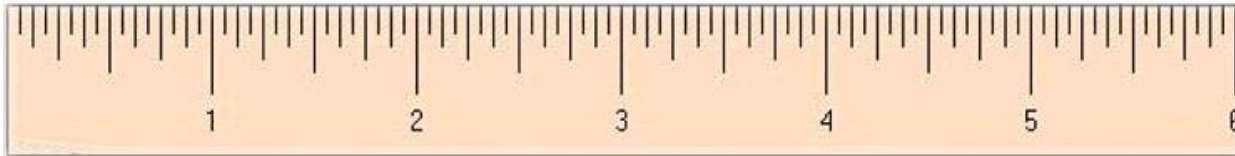
Since each mm is a decimal point of a centimeter

= 9 cm plus 0.2 cm

= 9.2 cm

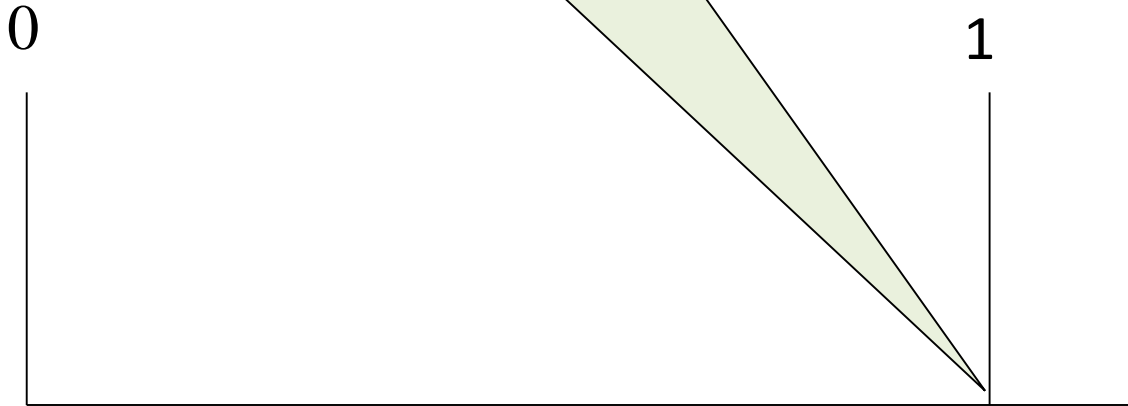# Measuring - Imperial

Step 3 cont'd...

The Imperial Measurement System

This system confuses many beginners, but with a few tips it won't be confusing for long!

Step 3 cont'd…

In most cases, an inch is simply too coarse a unit to be able to describe distances accurately.

0   1

The solution…divide the inch into two parts. Now if your measurement lands at this point it can be described as having one of two parts, or 1 of 2 and this is written ½. For measuring purposes forget for the moment that this is a "half" and try to see it as being 1 of 2 parts, or ½.
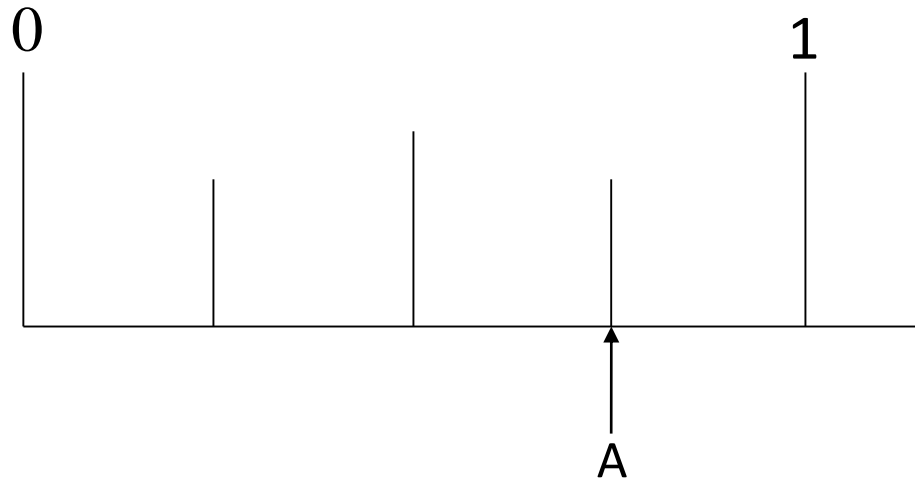
0

1
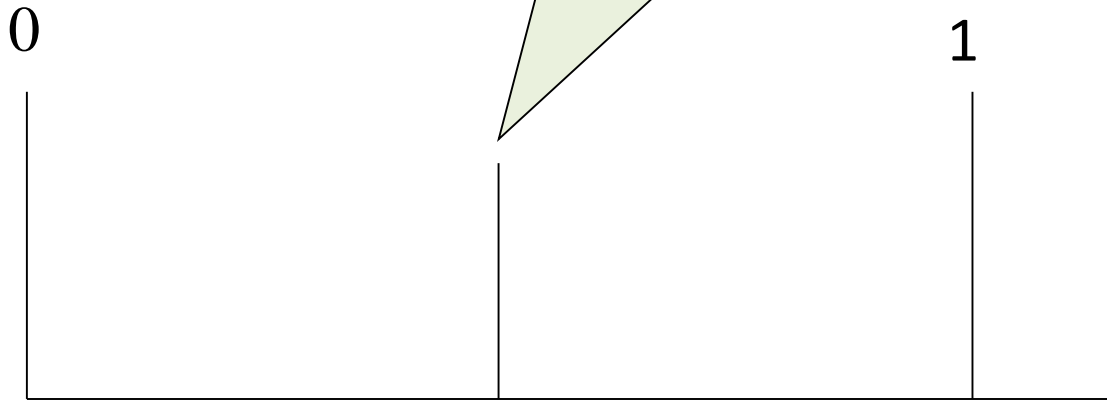
Step 3 cont'd…

But just creating twice as many divisions (two from what was one) didn't create a system that could produce accurate enough measurements for practical application so they divided each division again!

0   1
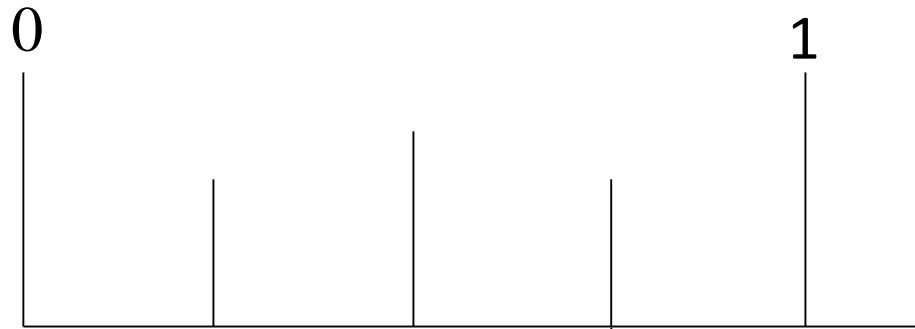
Step 3 cont'd...

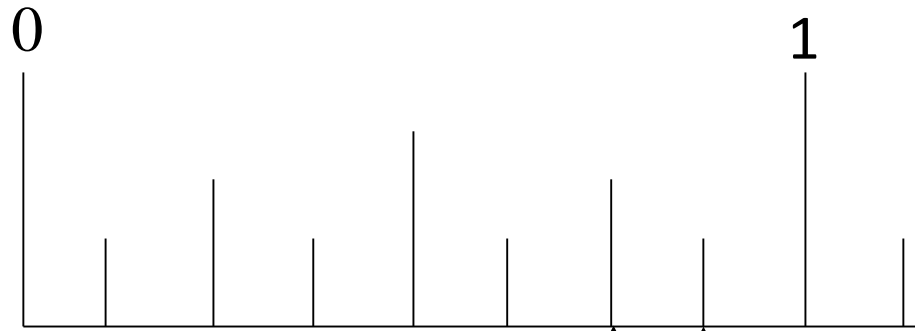Now we look at measurement 'A' and how many we have of 4 parts...

'A' would be 3 of 4 parts or ¾ which would be said three-quarters of an inch, or ¾"

0   1

A

Step 3 cont'd...
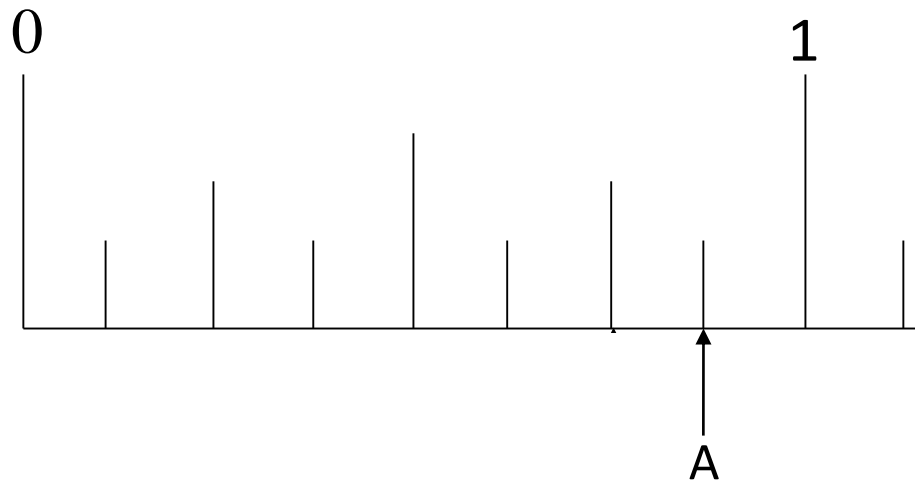
Still not accurate enough, so they did it again!

Each division was divided in half once more creating 8 division between zero and one, but the rules don't change just count how many you have of the possible 8.
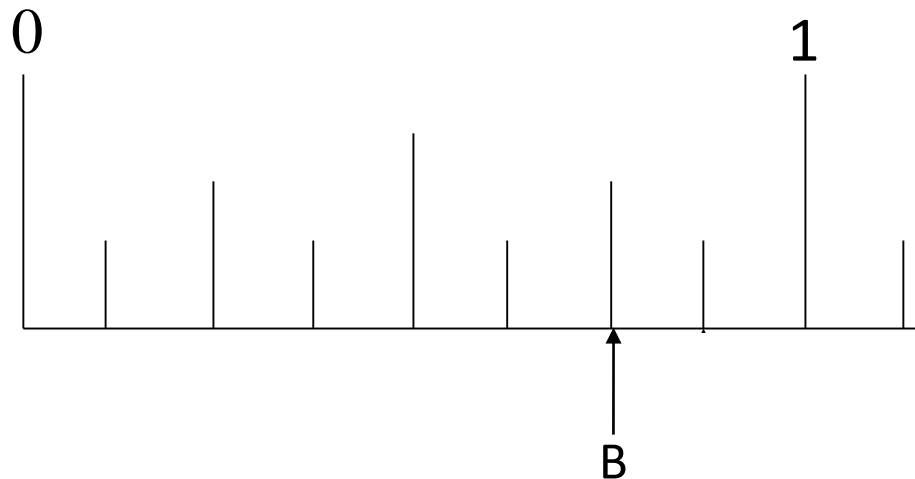
Step 3 cont'd...

What would point "A" measure?

Seems we have seven of a possible 8 units and therefore it must be 7/8"

Step 3 cont'd...

What would point "B" measure?

We have six of a possible 8 units and therefore it must be 6/8"

0   1

B
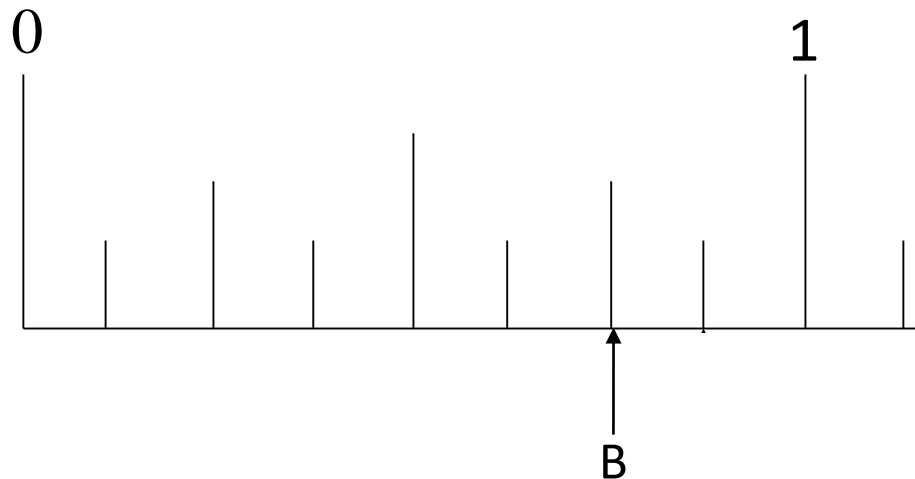
Unfortunately this would be wrong ☹

Measurements are always written in something called "Lowest Terms" (Remember this from Math class?)

6/8" is a fraction that can be reduced.

To do this divide the top and bottom number by two until you cannot do it anymore and have the number remain whole.
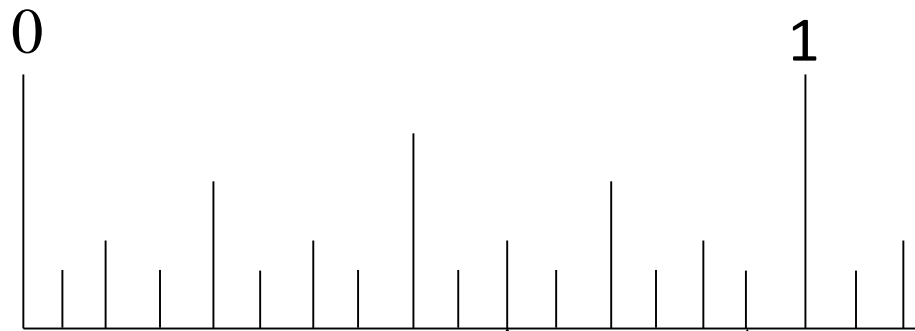
0   1

B

6/8" becomes 3/4"

Step 3 cont'd…

Still not accurate enough, so they did it again!
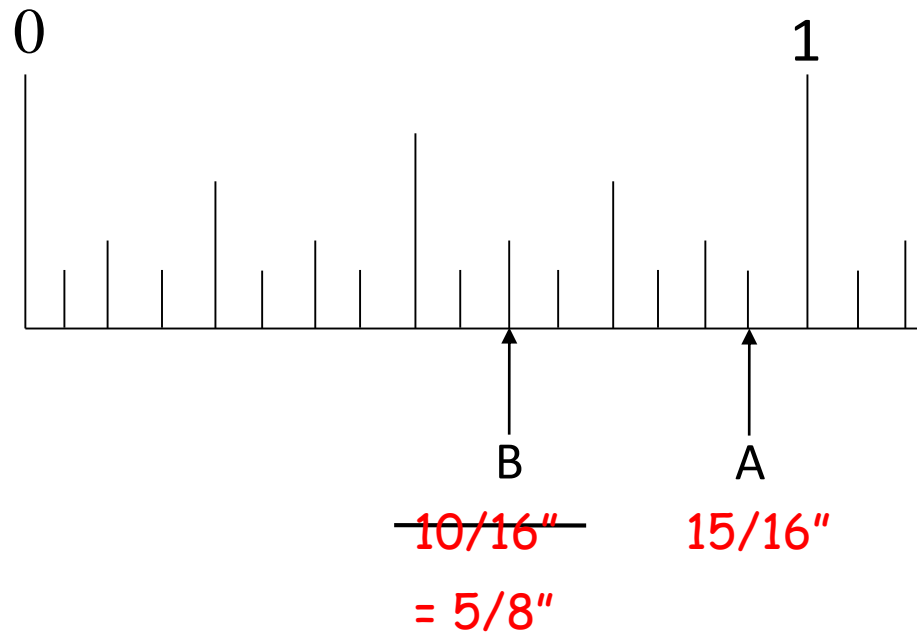
Now we have sixteen units, most tape measures have at least this many divisions.

0   1
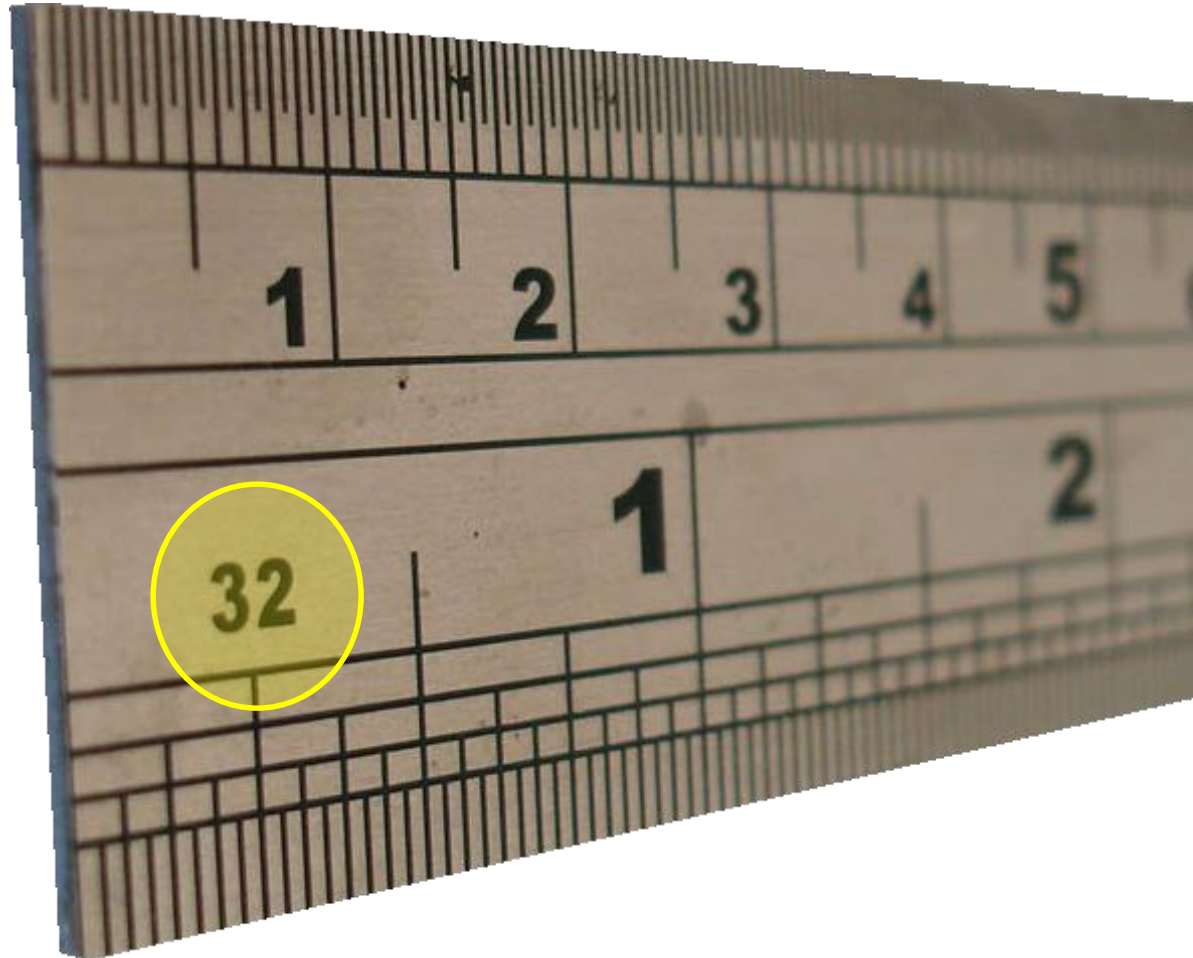
Step 3 cont'd...

What would point 'A' measure?

What would point 'B' measure?

0   1

B   A

~~10/16"~~   15/16"

= 5/8"

Some General Notes

Most imperial scales have the number of division marked on them so you don't have to spend time counting this, it can just be read!

Some General Notes

Most measuring scales have at least 16 divisions between each inch, but many go further dividing into 32, 64 and some even into 128 parts!

1. count the number of lines

2. place the number over the total number of divisions

3. Reduce to lowest terms if possible

And if over one inch, don't forget to add the number of inches to your fraction.