

Units of Measurement – Metalwork

Name: _____ Block: _____ Date: _____

What are the two main units of measurements used in North America?

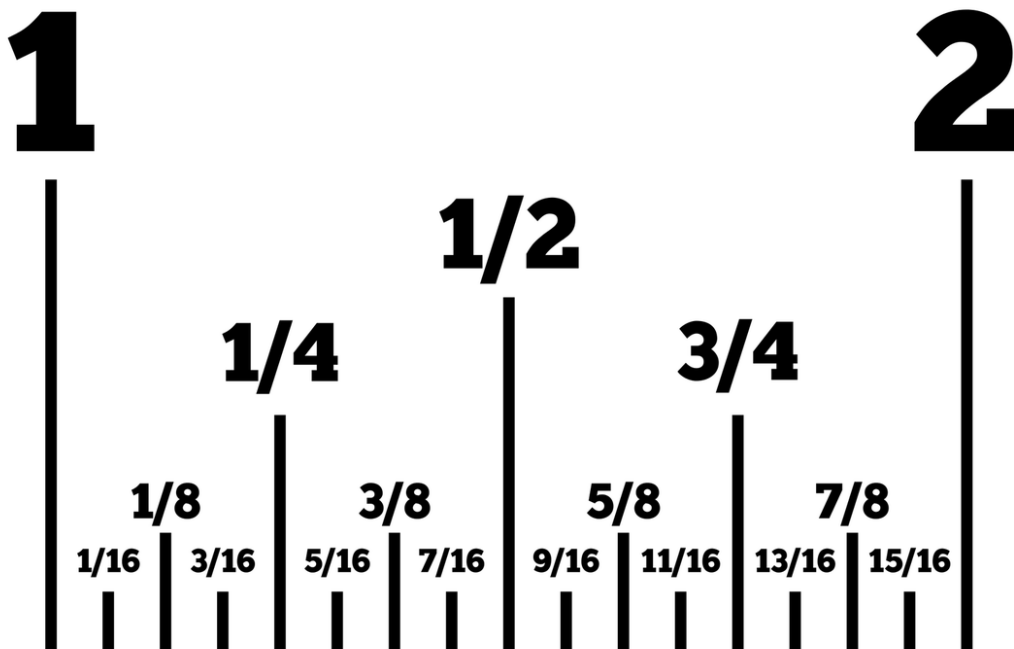
Imperial System

First defined by the British in the 1800's

Lengths: mile, yard, foot, inch

Canada continues to use the Imperial System when trading with goods with the USA

Imperial Measurement Tips:



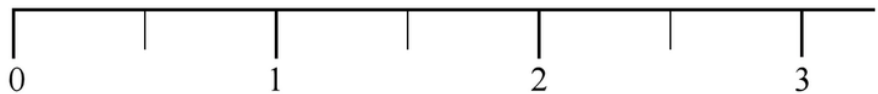
Fill in the answers to the 12 Times Table

$12 \times 1 = \underline{\quad}$	$12 \times 4 = \underline{\quad}$	$12 \times 7 = \underline{\quad}$	$12 \times 10 = \underline{\quad}$
$12 \times 2 = \underline{\quad}$	$12 \times 5 = \underline{\quad}$	$12 \times 8 = \underline{\quad}$	$12 \times 11 = \underline{\quad}$
$12 \times 3 = \underline{\quad}$	$12 \times 6 = \underline{\quad}$	$12 \times 9 = \underline{\quad}$	$12 \times 12 = \underline{\quad}$

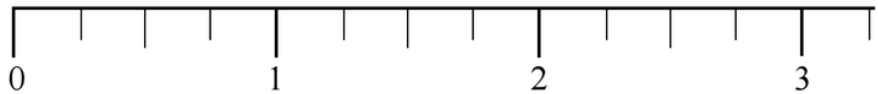
Here are four rulers that all measure in inches. They are NOT to scale. Instead, they are magnified to be "bigger" than the actual rulers, so you can see the divisions better.

The tick-marks are:

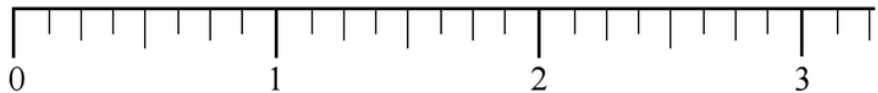
every
1/2-inch:



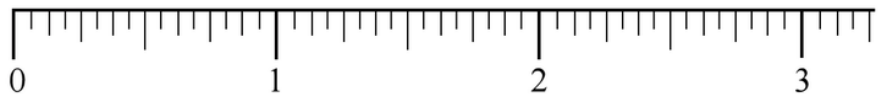
every
1/4-inch:



every
1/8-inch:



every
1/16-inch:



You must remember to simplify your fractions

For example:

12 ticks = $\underline{\quad}$ /16ths of an inch

Divide the numerator and the denominator by 4.

Remember: Whatever you do to the top number you must do to the bottom number

12 divided by 4 = $\underline{\quad}$

16 divided by 4 = $\underline{\quad}$

Simplified fraction - $12/16'' = \underline{\hspace{2cm}}$ of an inch (simplified fraction answer) or
 $\underline{\hspace{2cm}}$ (full written word answer).

Conventions (symbols) how to express inches and feet in your answers

All are correct but we will use the last convention showing only the symbols of feet and inches

$$1 \text{ foot} = 1\text{ft} = 1'$$

$$1 \text{ inch} = 1\text{in} = 1''$$

Convention Samples:

2 feet and 3 inches will be expressed as follows:

___ ' ___ ''

2 feet 3 and 1/6th of an inch will be expressed as follows

___ ' ___ _____ '' The inch mark goes at the very end of the fraction of an inch

Metric System

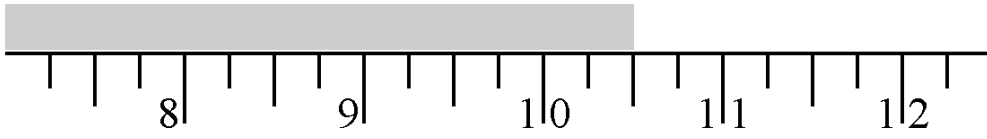
Most used system of measurement worldwide (ie: Canada, Europe)

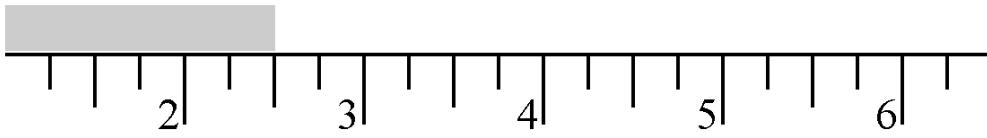
Lengths: kilometer, meter, centimeter, millimeter

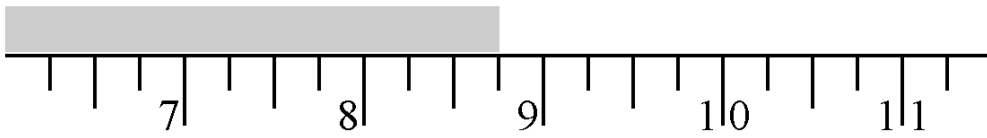
Canada adopted this system in 1970 to replace the Imperial System

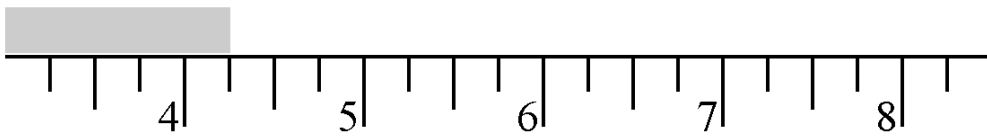
Let's practice on the next pages!

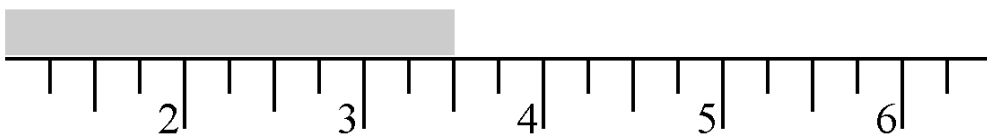
Imperial Measurement – Answer with a fraction in inches!
Don't forget to simplify your fraction ($2/4''$ would be $1/2''$).

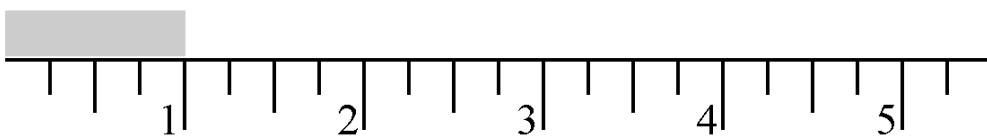


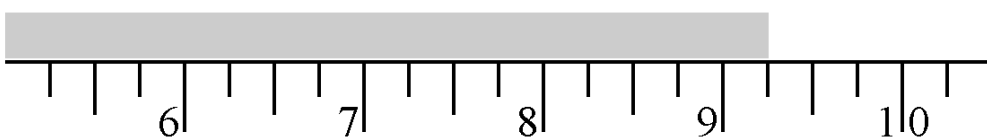


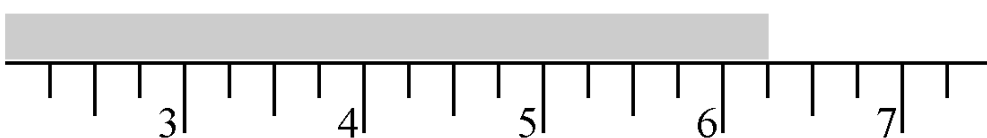


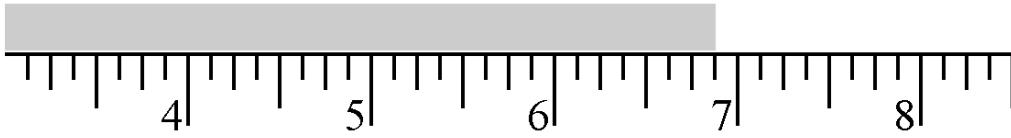


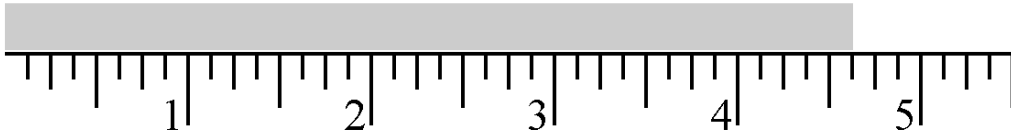


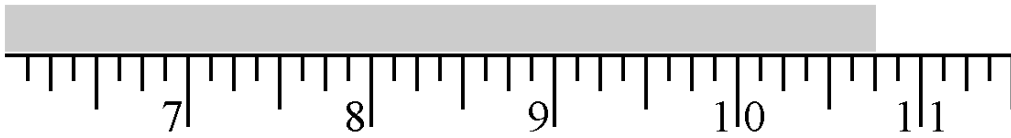


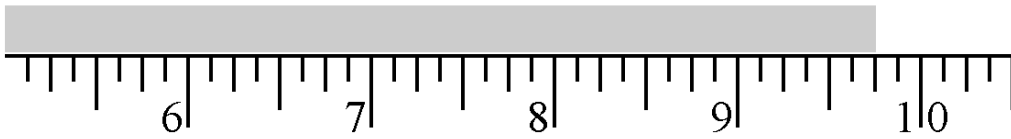


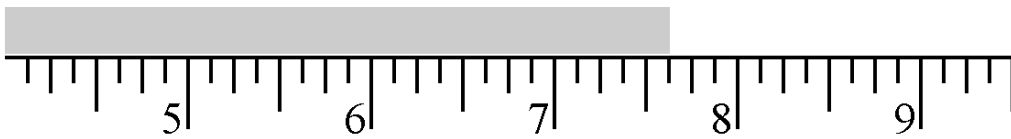


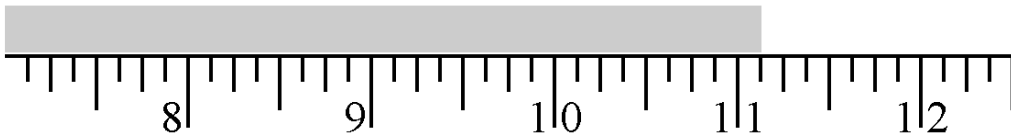


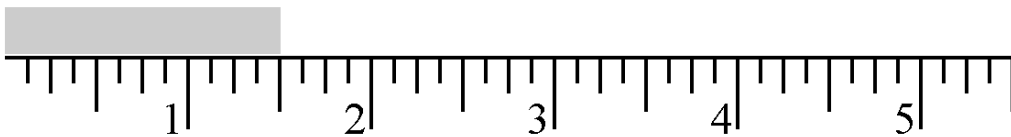


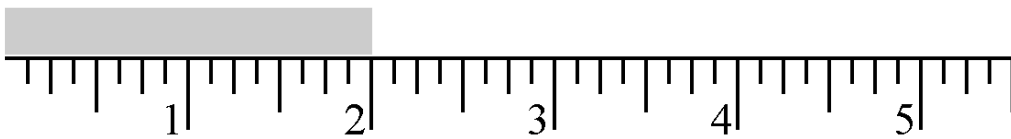


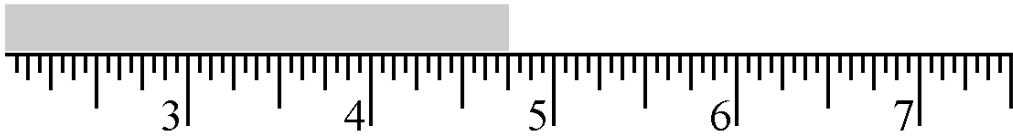


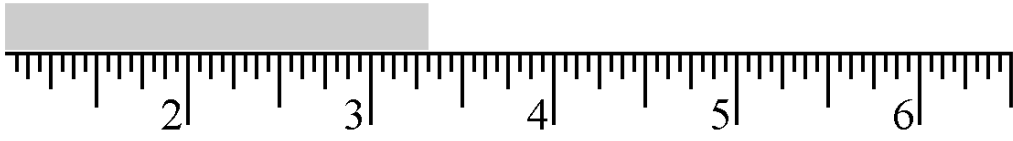


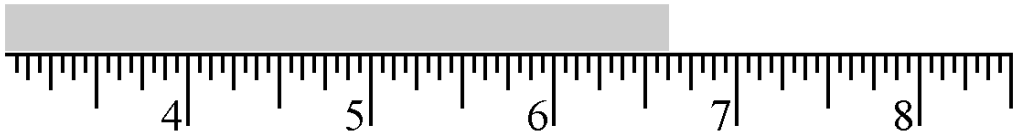


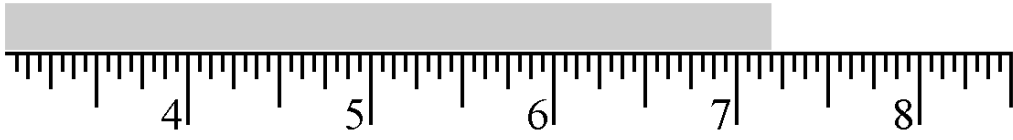


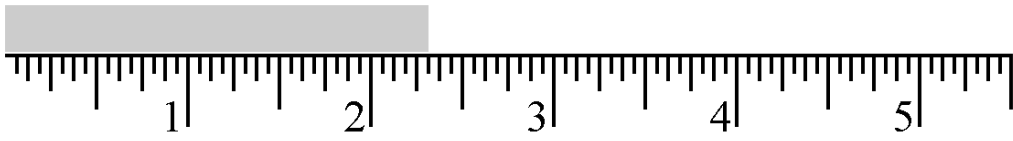


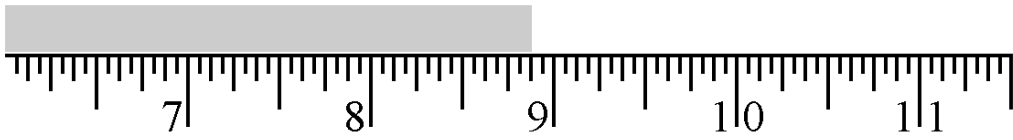


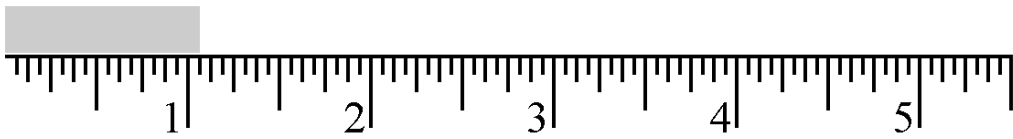


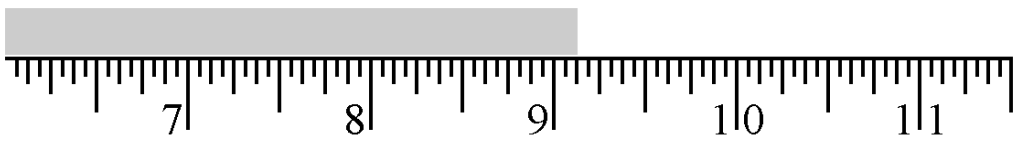


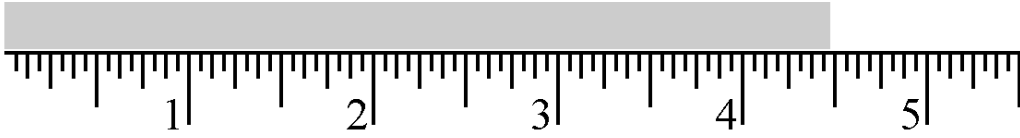


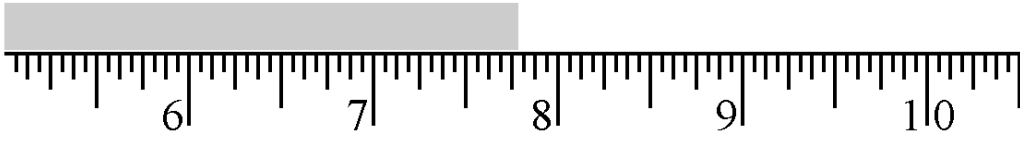


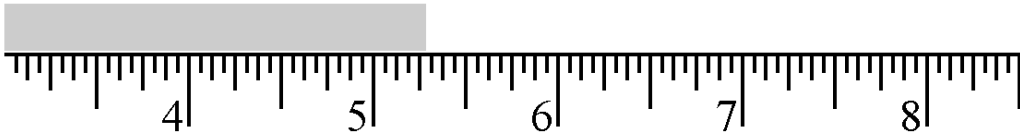


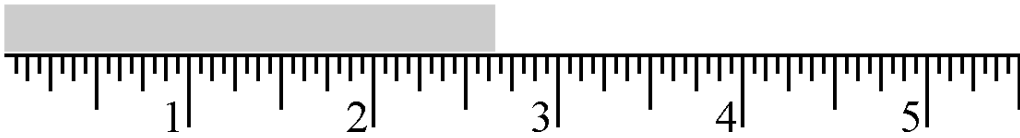


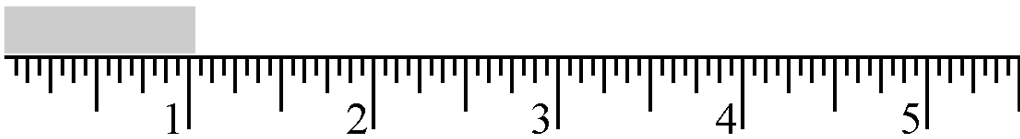


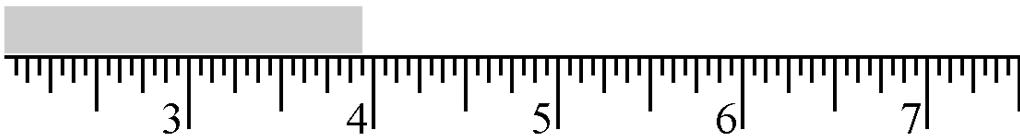


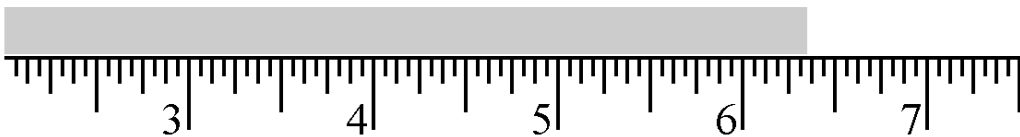


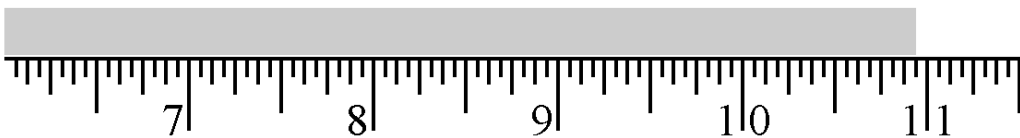












Measure in length of the rectangle in inches using a REAL ruler

How many Inches ?

















Measure the length of the rectangle in inches using a REAL ruler

How many Inches ?

















Decimal Equivalents of Fractions for an Inch

$1/64 = 0.015625$	$11/32 = 22/64 = 0.343750$	$43/64 = 0.671875$
$1/32 = 2/64 = 0.031250$	$23/64 = 0.359375$	$11/16 = 22/32 = 44/64 = 0.687500$
$3/64 = 0.046875$	$3/8 = 12/32 = 24/64 = 0.375000$	$45/64 = 0.703125$
$1/16 = 2/32 = 4/64 = 0.062500$	$25/64 = 0.390625$	$23/32 = 46/64 = 0.718750$
$5/64 = 0.078125$	$13/32 = 26/64 = 0.406250$	$47/64 = 0.734375$
$3/32 = 6/64 = 0.097500$	$27/64 = 0.421875$	$3/4 = 24/32 = 48/64 = 0.750000$
$7/64 = 0.109375$	$7/16 = 14/32 = 28/64 = 0.437500$	$49/64 = 0.765625$
$1/8 = 4/32 = 8/64 = 0.125000$	$29/64 = 0.453125$	$25/32 = 50/64 = 0.781250$
$9/64 = 0.140625$	$15/32 = 30/64 = 0.468750$	$51/64 = 0.796875$
$5/32 = 10/64 = 0.156250$	$31/64 = 0.484375$	$13/16 = 26/32 = 52/64 = 0.812500$
$11/64 = 0.171875$	$1/2 = 16/32 = 32/64 = 0.500000$	$53/64 = 0.828125$
$3/16 = 6/32 = 12/64 = 0.187500$	$33/64 = 0.515625$	$27/32 = 54/64 = 0.843750$
$13/64 = 0.203125$	$17/32 = 34/64 = 0.531250$	$55/64 = 0.859375$
$7/32 = 14/64 = 0.218750$	$35/64 = 0.546875$	$7/8 = 28/32 = 56/64 = 0.875000$
$15/64 = 0.234375$	$9/16 = 18/32 = 36/64 = 0.562500$	$57/64 = 0.890625$
$1/4 = 8/32 = 16/64 = 0.250000$	$37/64 = 0.578125$	$29/32 = 58/64 = 0.906250$
$17/64 = 0.265625$	$19/32 = 38/64 = 0.593750$	$59/64 = 0.921875$
$9/32 = 18/64 = 0.281250$	$39/64 = 0.609375$	$15/16 = 30/32 = 60/64 = 0.937500$
$19/64 = 0.296875$	$5/8 = 20/32 = 40/64 = 0.625000$	$61/64 = 0.953125$
$5/16 = 10/32 = 20/64 = 0.312500$	$41/64 = 0.640625$	$31/32 = 62/64 = 0.968750$
$21/64 = 0.328125$	$21/32 = 42/64 = 0.656250$	$63/64 = 0.984375$

Convert The following Fractions into a Decimal answer (example $\frac{1}{2}'' = 0.50''$)

$$5/16 = \underline{\hspace{2cm}}$$

$$14/32 = \underline{\hspace{2cm}}$$

$$3/8 = \underline{\hspace{2cm}}$$

$$7/8 = \underline{\hspace{2cm}}$$

$$1 \frac{3}{4} = \underline{\hspace{2cm}}$$

$$5 \frac{9}{16} = \underline{\hspace{2cm}}$$

$$9 \frac{3}{16} = \underline{\hspace{2cm}}$$

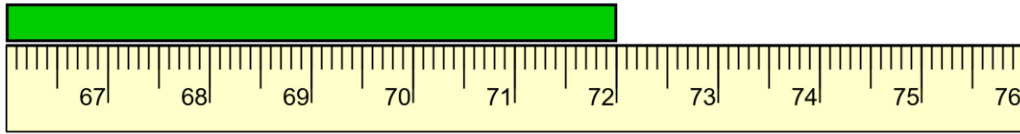
$$\frac{1}{4} = \underline{\hspace{2cm}}$$

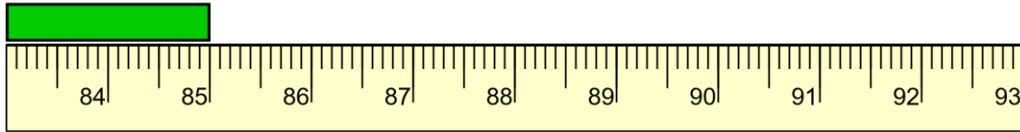
$$6 \frac{1}{2} = \underline{\hspace{2cm}}$$

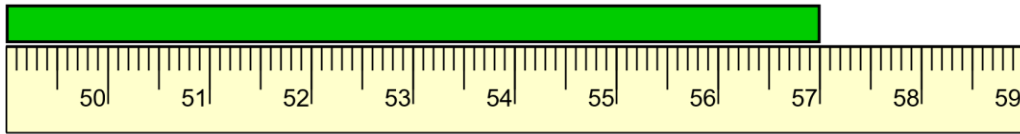
$$7 \frac{3}{8} = \underline{\hspace{2cm}}$$

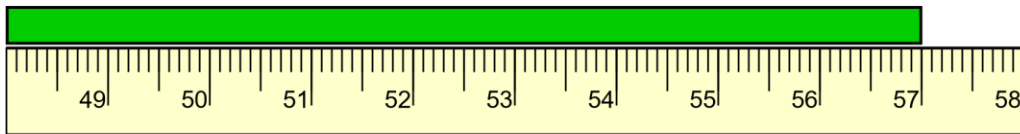
Answer in METRIC

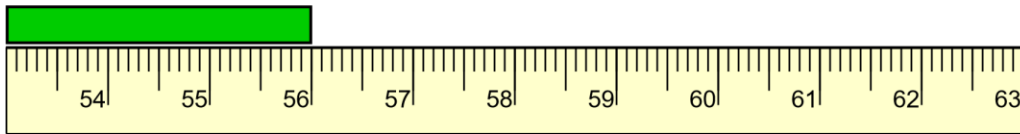
How many Centimeters ?

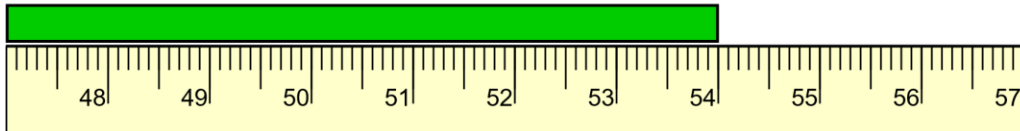


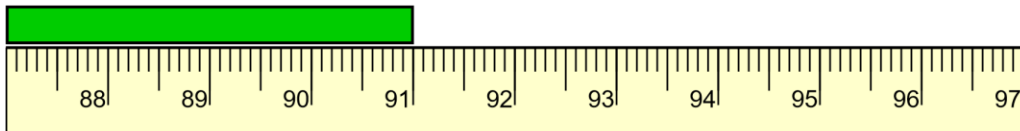


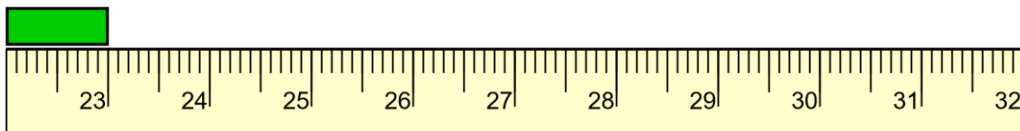




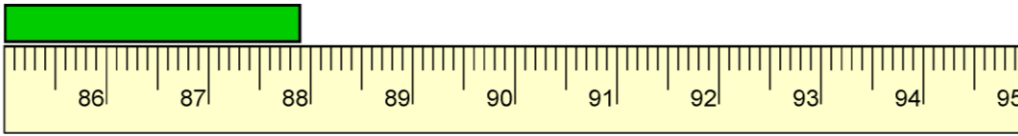


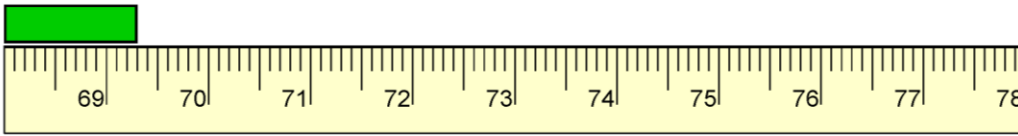


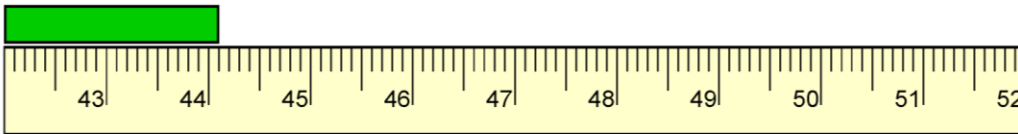


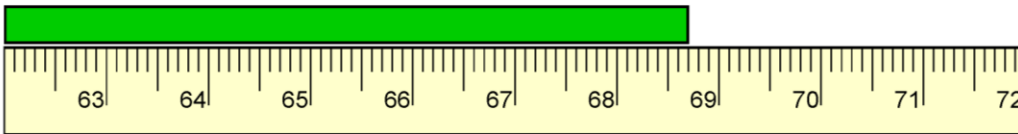


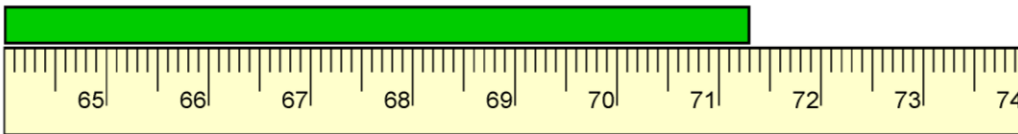
How many Millimeters ?

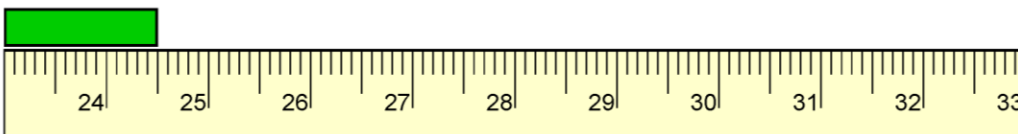


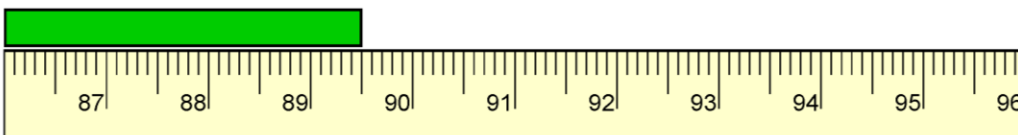


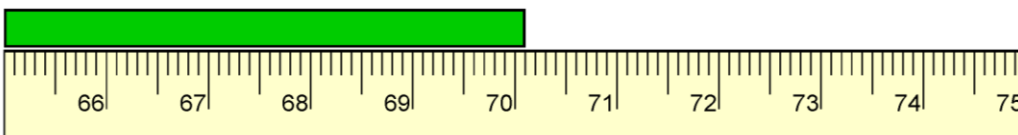




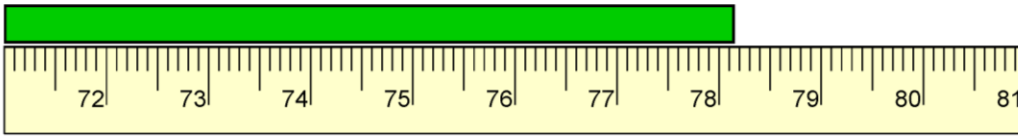


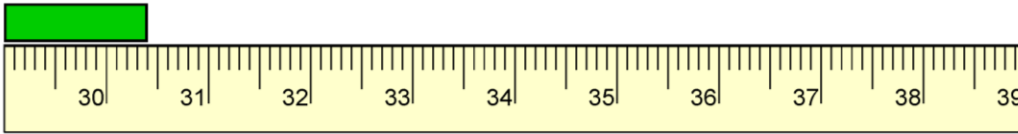


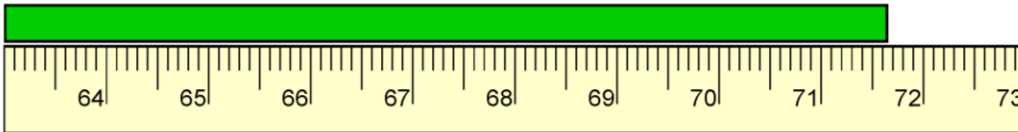


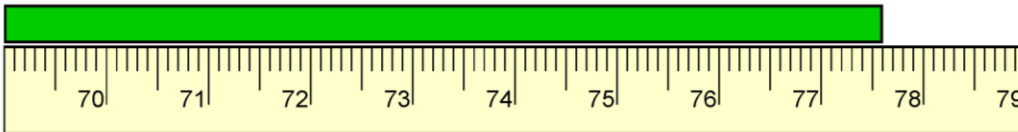


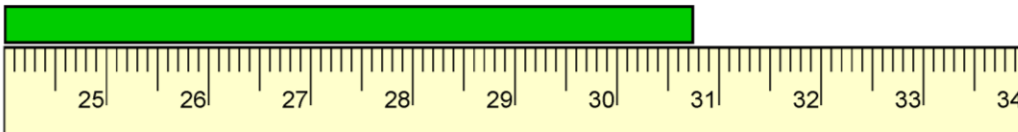
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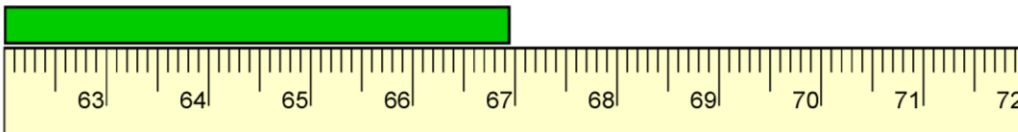


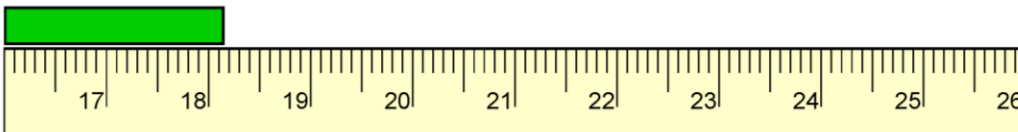


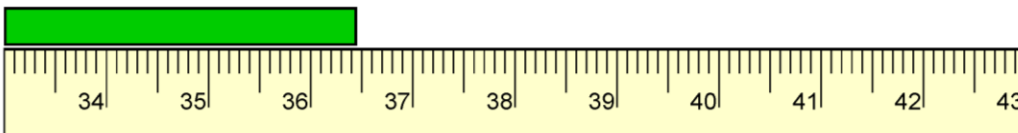












Measure the length in centimeters using a REAL ruler
Round up your answer to the nearest hundredths. Example = 2.55cm)

How many cm?













