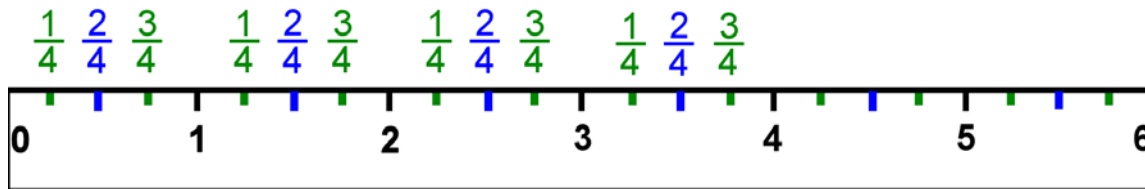
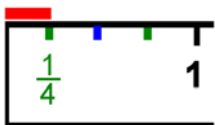


Measuring to the Nearest Fourth-Inch

This ruler measures in inches. You can see three lines between each two numbers on the ruler. Those three lines divide each inch *into four parts*. The parts are *fourth parts* or *quarters* of an inch. We have marked those quarters with fractions.



The $\frac{2}{4}$ mark is also the $\frac{1}{2}$ mark. We normally use $\frac{1}{2}$ instead of $\frac{2}{4}$.



This line is $\frac{1}{4}$ inch long.



This line is $\frac{2}{4}$ inch long.
It is also $\frac{1}{2}$ inch long.



This line is $\frac{3}{4}$ inch long.

If a line reaches to the $\frac{1}{4}$ -inch mark after the number 1, then the line is 1 inch *and* $\frac{1}{4}$ inch long. But when writing it, we omit the “and” and write: The line is $1 \frac{1}{4}$ inches long.



If a line reaches the $\frac{3}{4}$ -inch mark after the number 2, then the line is 2 inches *and* $\frac{3}{4}$ inch long, but we write it as $2 \frac{3}{4}$ inches long.

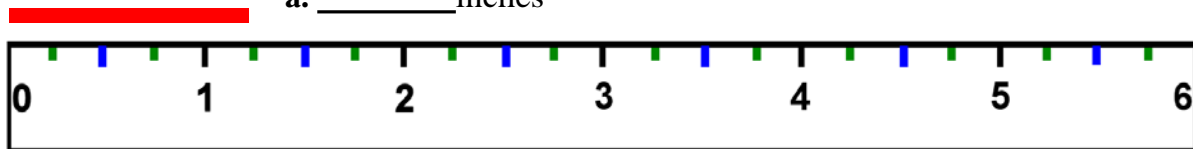


This line is $3 \frac{1}{2}$ inches long.

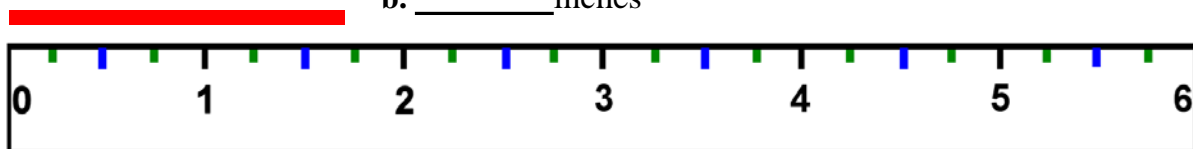


1. Measure the lines using the ruler.

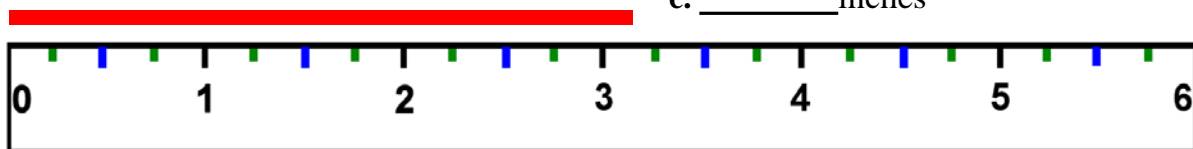
a. _____ inches



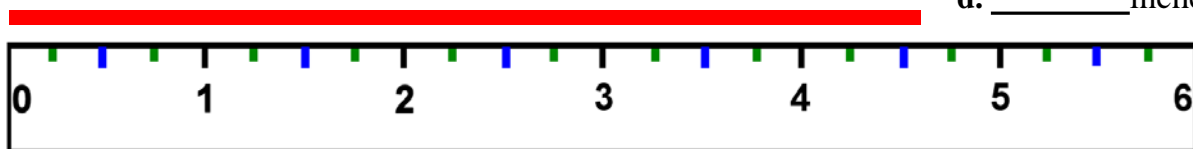
b. _____ inches



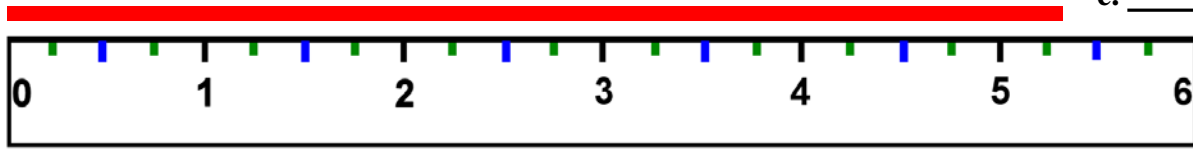
c. _____ inches



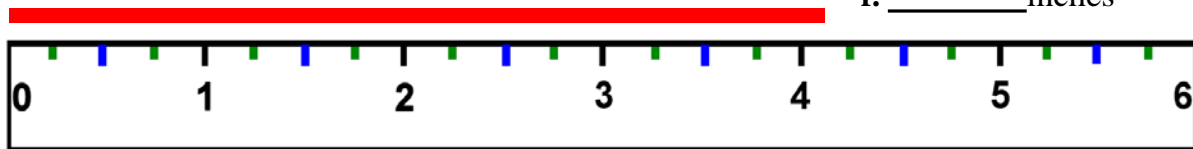
d. _____ inches



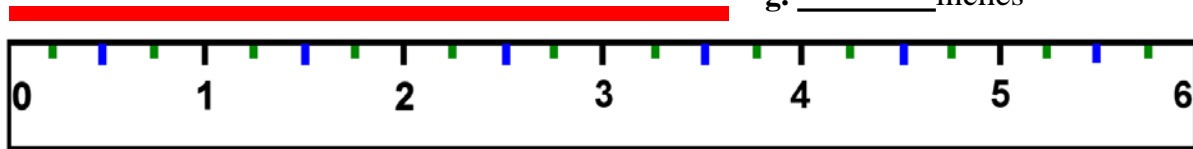
e. _____ in.



f. _____ inches



g. _____ inches



2. Draw lines using a ruler. Your own ruler may have many more little lines between the whole inch marks. If you find your own ruler confusing, you can cut out one of the rulers from the previous pages, and use that. Glue it on cardboard, or place it on top of your ruler.

a. 4 1/2 inches long

b. 2 1/4 inches long

c. 5 1/4 inches long

d. 4 3/4 inches long

This line is not exactly 3/4 inch long, nor exactly 1 inch long, but its length is between those two. The endpoint of the line is closer to the 3/4-inch mark than it is to the 1-inch mark. We say the line is *about* 3/4 inch long, or *approximately* 3/4 inch long.



3. Measure items using the ruler that has the 1/4, 1/2, and 3/4 inch marks (quarters of an inch). If the item is not exactly as long as the markers on the ruler show, choose the nearest mark as the length, and write “about 5 1/4 inches,” etc.

Item	Length

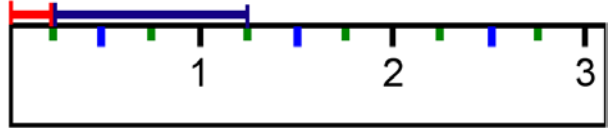
Let's use the plus sign “+” to mean that we place two lines end-to-end.

$$1/4 \text{ inch} + 3/4 \text{ inch} = 1 \text{ inch}$$



Here, the second line “covers” three short 1/4 inch segments, so it is 3/4 inch long.

$$1/4 \text{ inch} + 1 \text{ inch} = 1 \frac{1}{4} \text{ inches}$$



Here, the second line “covers” four short 1/4 inch segments, so that is why it is 1 inch long.

4. Draw another line after the 1/4-inch line. Add the lengths and find the total length.



a. $1/4 \text{ inch} + 1/4 \text{ inch} = \underline{\hspace{2cm}}$ inches



b. $1/4 \text{ inch} + 1/2 \text{ inch} = \underline{\hspace{2cm}}$ inches



c. $1/4 \text{ inch} + 1 \frac{1}{4} \text{ inch} = \underline{\hspace{2cm}}$ inches



d. $1/4 \text{ inch} + 2 \text{ inch} = \underline{\hspace{2cm}}$ inches

5. Work out these “line additions”. You can use the ruler below to help. Or, you can draw the lines.

a. $1/4 \text{ in.} + 1/4 \text{ in.} = \underline{\hspace{2cm}}$

$1 \frac{1}{4} \text{ in.} + 1/4 \text{ in.} = \underline{\hspace{2cm}}$

b. $1/4 \text{ in.} + 3/4 \text{ in.} = \underline{\hspace{2cm}}$

$4 \frac{1}{4} \text{ in.} + 1/4 \text{ in.} = \underline{\hspace{2cm}}$

c. $5 \frac{1}{4} \text{ in.} + 3/4 \text{ in.} = \underline{\hspace{2cm}}$

$7 \frac{3}{4} \text{ in.} + 1/4 \text{ in.} = \underline{\hspace{2cm}}$

d. $1/2 \text{ in.} + 1/4 \text{ in.} = \underline{\hspace{2cm}}$

$2 \frac{1}{2} \text{ in.} + 1/4 \text{ in.} = \underline{\hspace{2cm}}$

