



Model Design and Building Merit Badge Day One Homework: Rule It, Scale It !!

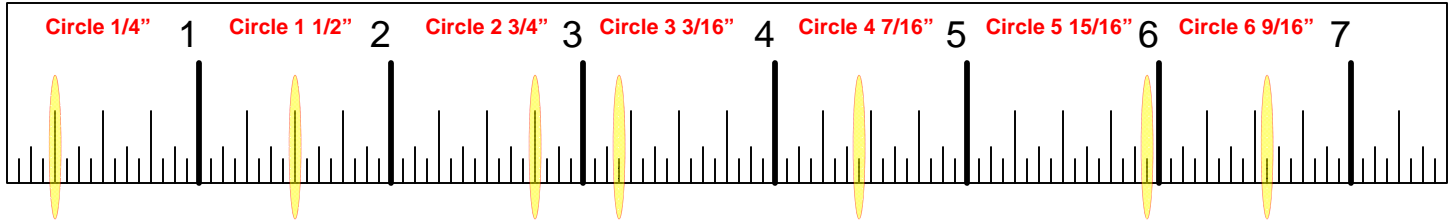
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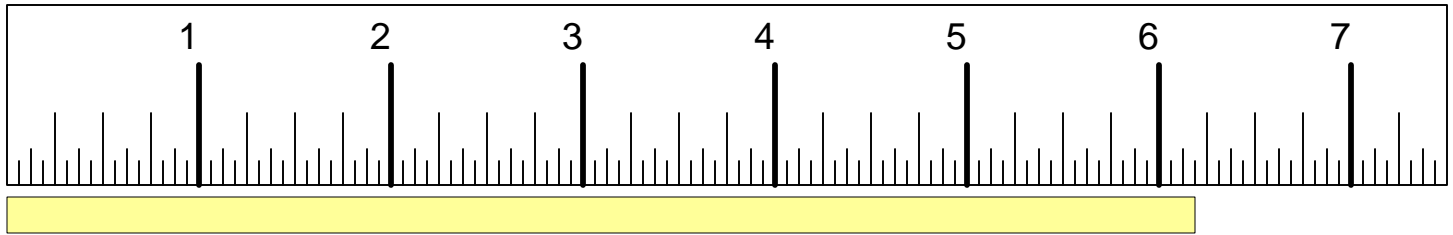
Part 1 – Rule It !!

Complete the following practice exercises with using the provided ruler / tape measure which is labeled for quarters, eighths, and sixteenths

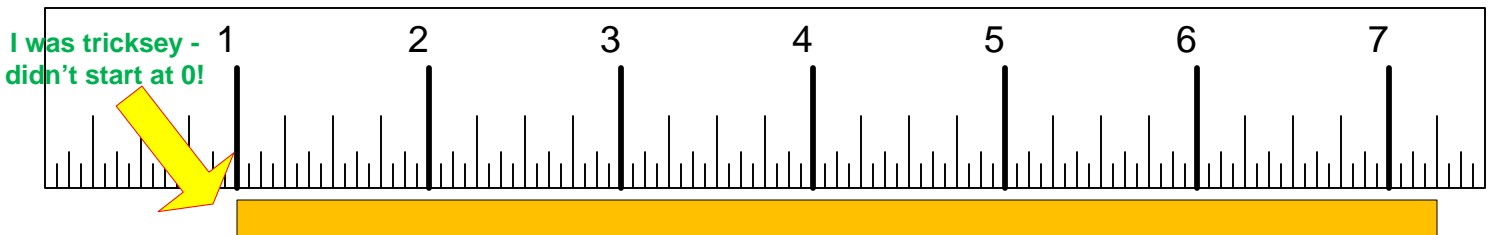
1. Circle the requested points shown in red



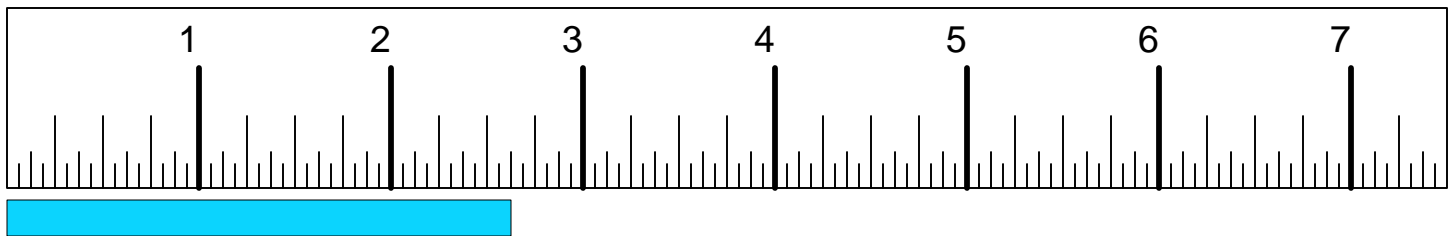
2. How long is the yellow box? 6 3/16 inches



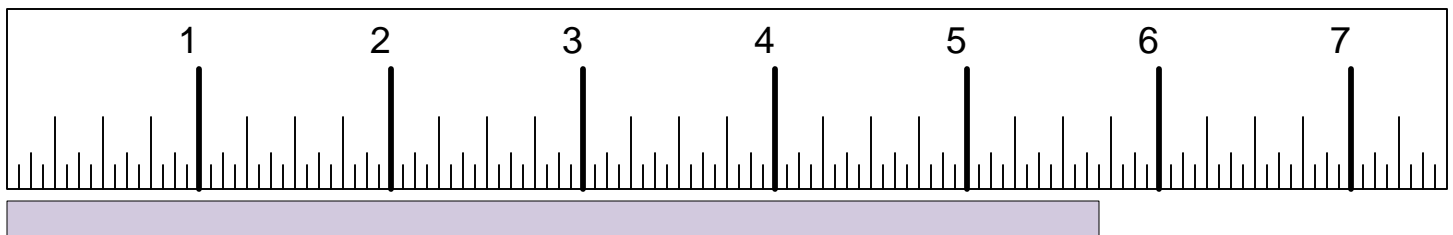
3. How long is the orange box? 6 1/4 inches



4. How long is the blue box? 2 5/8 inches



5. How long is the purple box? 5 11/16 inches



To get credit for this requirement, you must email Mr. Eric this completed sheet.

Merit Badge Counselor: Eric Cutright, Troop 1028/1029, Charlottesville, VA – visit us at www.troop1028.org



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Part 2 – Scale It !!

Complete the following practice exercises with working with scales. We want to make an architectural model of the scale house plan shown in the picture.

Question 1:

If I use a scale of $\frac{1}{4}$ " (model) = 1 ft (real) what will the overall model dimensions be?

12.5 inches x 10 inches

Question 2:

If I use a scale of $\frac{1}{2}$ " (model) = 1 ft (real), what will the overall model dimensions be?

25 inches x 20 inches

Question 3:

If I use a scale of 1" (model) = 1 ft (real), what will the overall model dimensions be?

50 inches x 40 inches

Question 4:

If I use a scale of 2" (model) = 1 ft (real), what will the overall model dimensions be?

100 inches x 80 inches

Question 5:

I'm going to make my model out of cardboard. I have an infinite supply, but the largest dimension of my cardboard is 26". If I make each outside wall from one piece of cardboard, what is the maximum scale I can use?

26 inches (model) = 50 feet (reality)

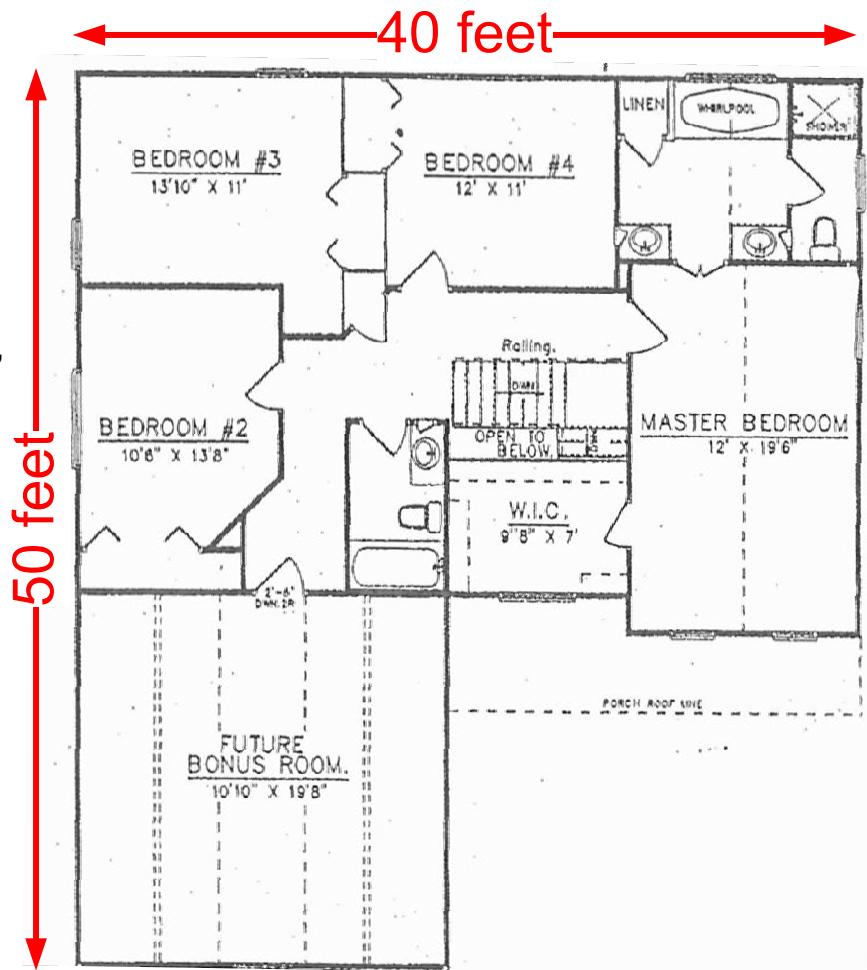
Or simplify - $26" : 50' = 1" : 1.92'$ OR $0.52" : 1'$

Question 6:

The scale for question 5 might be challenging to use. What would be an easier scale where I could use almost the full width of my cardboard?

25 inches (model) = 50 feet (reality)

Or simplify - $25" : 50' = 1" : 2'$ OR $\frac{1}{2}" : 1'$



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