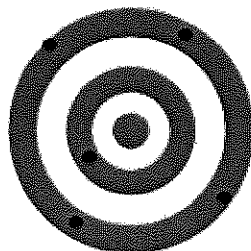


M3LE2 Check Your Understanding Sample Solutions

Instructions: After completing the activity, compare your solutions to the sample solutions provided. Use the Self-Assessment Rubric (located in the Rubrics) to assess your own work. Make any necessary adjustments to your work and be sure to save it for later reference.

1. Accuracy is often expressed as an average of several measurements. Look at the target and explain how well the 5 shots on the target represent:

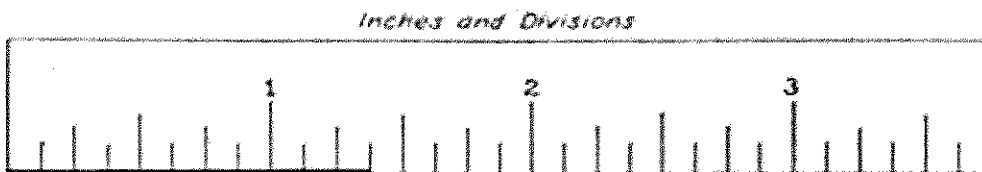
a. Accuracy? b. Precision?



- a) On the target, all the shots are far away from the centre so the average accuracy is poor.
b) Since all five shots are quite spread out, the precision is also poor.

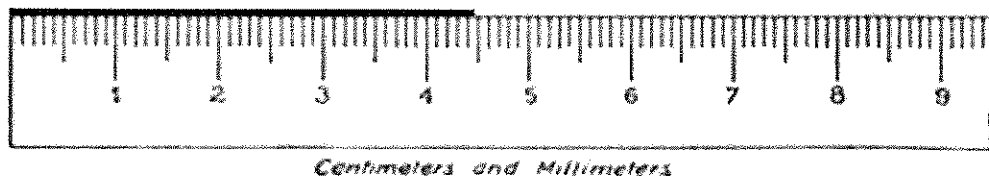
2. Measure each of the following lines using the rulers given. How precise is each measurement?

a)



The string measures 1 inch and $\frac{3}{8}$ of an inch = $1\frac{3}{8}$ ". The measurement is precise to an eighth of an inch.

b)



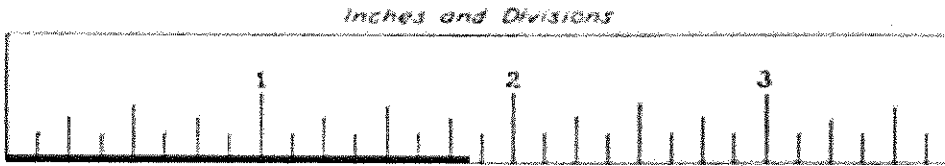
The string measures 4.4 or 4.5 centimetres. The measurement is precise to a tenth of a centimetre or to the nearest millimetre.

3. Measure the length of the line precise to the nearest indicated unit, using the imperial ruler provided.

a) $1\frac{1}{2}$ "

b) $1\frac{1}{4}$ "

c) $1\frac{7}{8}$ "



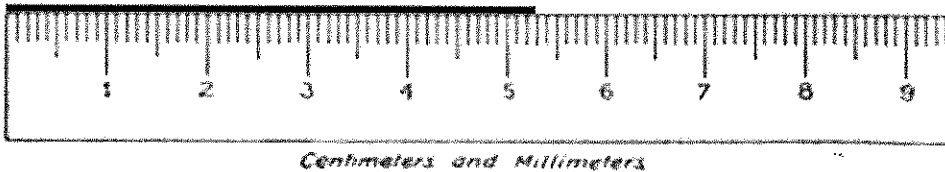
- a) The length of the line is closer to 2 inches than it is to 1.5 inches so it is 2 inches to the nearest $\frac{1}{2}$ ".
- b) The length of the line is closer to $1\frac{3}{4}$ " than it is to 2", so it is $1\frac{3}{4}$ " to the nearest $\frac{1}{4}$ ".
- c) The length of the line is closer to $1\frac{7}{8}$ " than it is to $1\frac{6}{8}$ ", so it is $1\frac{7}{8}$ " to the nearest $\frac{1}{8}$ ".

4. Measure the length of the line precise to the nearest indicated unit, using the metric ruler provided.

a) cm

b) $\frac{1}{2}$ cm

c) $\frac{1}{10}$ cm



- a) The length of the line is closer to 5 cm than it is to 6 cm so it is 5 cm long to the nearest cm.
- b) The length of the line is closer to 5.5 cm than it is to 5 cm so it is 5.5 cm long to the nearest $\frac{1}{2}$ cm.
- c) The length of the line is closer to 5.3 cm than it is to 5.2 cm so it is 5.3 cm long to the nearest tenth of a cm.

5. A car dealership plans to rope off their lot. The lot measures 200 m by 80 m.

a) How precise are the measurements?

The measurements are precise to the nearest m.

b) What is the length of rope needed to section off the lot?

$$200\text{m} + 200\text{m} + 80\text{m} + 80\text{m} = 560\text{m}$$

c) Calculate the least possible length of rope needed.

$$199\text{m} + 199\text{m} + 79\text{m} + 79\text{m} = 556\text{m}$$

d) Calculate the greatest possible length of rope needed.

$$201\text{m} + 201\text{m} + 81\text{m} + 81\text{m} = 564\text{m}$$

e) Calculate the least possible area of the lot.

$$199\text{m} \times 79\text{m} = 15\,721\text{ m}^2$$

f) Calculate the greatest possible area of the lot.

$$201\text{m} \times 81\text{m} = 16\,281\text{ m}^2$$