Name _____   Date _____

Accuracy and Measurement - Guided Lesson Explanation

Explanation#1

We know that the greatest possible error is half of the unit of measure to which a measurement is rounded.

The measurement of 56 minutes was made to the nearest whole minute. The greatest possible error is half of 1 minute, which is 0.5 minutes.

Explanation#2

Precision is a property of measurement that is related to the unit of measure used; the smaller the unit of measure used, the more exact the measurement is.

A milliliter is a smaller unit than a liter.

1 liter = 1,000 milliliters

So, the measurement of 86 milliliters is more precise.

Explanation#3

First, we have to find out the greatest possible area. We should measure each to the nearest whole meter, so the greatest possible error is half of 1 meter, which is 0.5 meters.

When we find the maximum possible area, first, we will add the greatest possible error to each measurement and then we will multiply.

$$\text{Area} = (\text{Side})^2$$

$$= (8 + 0.5)^2$$

$$= (8.5)^2$$

$$= 72.25 m^2$$

When we find the minimum possible area, first, we will subtract the greatest possible error to each measurement and then we will multiply.

Area = (Side) ^{2}

= $(8 - 0.5)^2$

= $(7.5)^2$

= $56.25m^2$

So, the maximum possible area of the square is 72.25 meter square and the minimum possible area is 56.25 meter square.