

Prelab Questions

These questions need to be completed before entering the lab. Please show all workings.

Marker's Initials

Prelab 1

A rectangular object has length $L = (25.3 \pm 0.2) \text{ cm}$, width $W = (18.6 \pm 0.5) \text{ cm}$.

- What are the absolute uncertainties in length and width?

- Find the relative uncertainties in length and width.

Prelab 2

Given a set of length measurements: 60.4, 60.0, 61.1, 60.8, 60.6 *cm*.

- Find the average (mean) length

- Find the standard error (refer to the introductory pages of your Lab Workbook).

Laboratory Worksheet**Name and Student Number:**

Partner:

Date:

QUESTION 1:**Table 1:**

	Value	Units
Length		
Width		

QUESTION 2:

$$\delta L =$$

$$\delta W =$$

QUESTION 3:**QUESTION 4:**

$$L =$$

$$W =$$

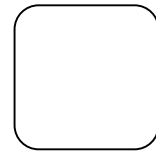
QUESTION 5:

$$\frac{\delta L}{L} =$$

$$\frac{\delta W}{W} =$$

QUESTION 6:

CHECKPOINT: Instructor Initial

**QUESTION 7:**

$$P =$$

QUESTION 8:

$$\delta P =$$

QUESTION 9:

$$P =$$

QUESTION 10:**Table 2:** The perimeter of your hand measured by a string

	Value	Uncertainty	Unit
Length			

QUESTION 11:**QUESTION 12:**

$$A = L \times W =$$

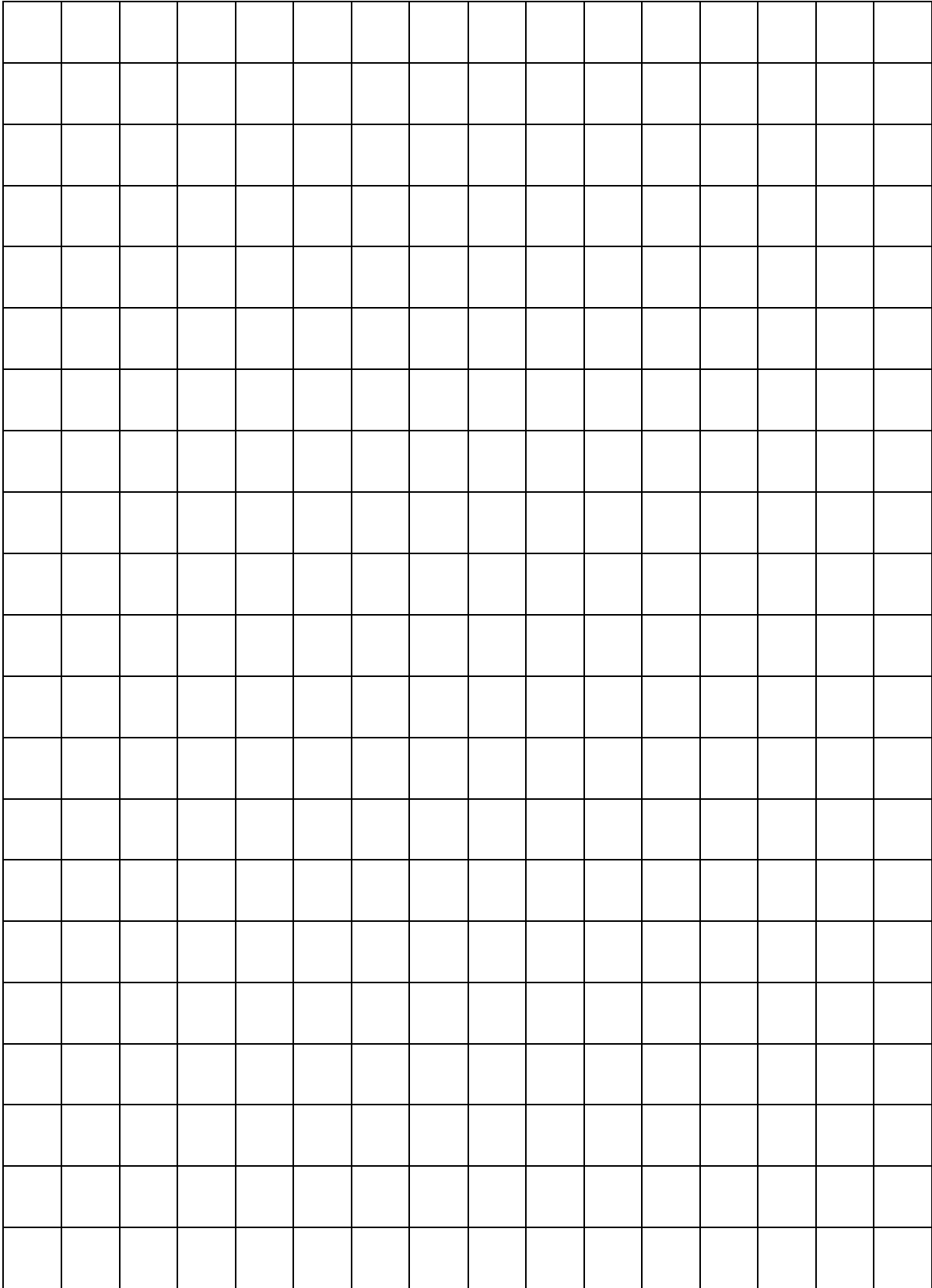
QUESTION 13:

$$\frac{\delta A}{A} =$$

QUESTION 14:

$$\delta A =$$

$$A =$$



graph paper is 1 cm \times 1cm squares

Table 3:

	Value	Uncertainty	Unit
Area			

QUESTION 15:**QUESTION 16:**

Table 4: Use software *Graphical Analysis* to do the calculations

L_i (cm)	W_i (cm)
$\bar{L} =$ (cm)	$\bar{W} =$ (cm)
$\sigma_L =$ (cm)	$\sigma_W =$ (cm)
$N =$ (no unit)	$N =$ (no unit)
$\sigma_{\bar{L}} = \frac{\sigma_L}{\sqrt{N}} =$ (cm)	$\sigma_{\bar{W}} = \frac{\sigma_W}{\sqrt{N}} =$ (cm)

QUESTION 17:

$$\bar{L} =$$

$$\bar{W} =$$

QUESTION 18:

QUESTION 19: