Calculations involving Significant Digits

Your final answer cannot be any more precise than the measurements used to determine it.

Addition / Subtraction

$$
\begin{array}{r}
125.365 \quad \text{m} \\
0.0278 \quad \text{m} \\
+ \quad 1.4 \quad \text{m} \\
\hline
126.7928 \quad \text{m}
\end{array}
$$

can only have one uncertain digit

$$\boxed{126.8 \quad \text{m}}$$

Round to the least precise place value

Multiplication / Division

$$
\begin{array}{r}
121.3 \quad \text{cm} \quad (4\,sd) \\
\times \quad 5.1 \quad \text{cm} \quad (2\,sd) \\
\hline
1213 \\
6065 \\
\hline
618.63 \quad \text{cm}^2
\end{array}
$$

can only have one uncertain digit

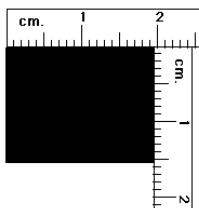*Round the final answer to the least number of sig digs used*

2 sd

$620\,\text{cm}^2$ or $\boxed{6.2 \times 10^2\,\text{cm}^2}$

better answer

Measurement and Significant Figures

Least count of ruler is 1 mm or 0.1 cm, doubtful digit will be to the nearest 0.01 cm.

Actual length lies between 1.9 cm and 2.0 cm. Estimated length is 1.97 cm. The doubtful digit is "7".

Area Range
Actual area lies between 1.9 x 1.5 and 2.0 x 1.6

1.9 x 1.5 = 2.85
2.0 x 1.6 = 3.2

so the actual area is between 2.85 and 3.2 cm²

Actual width lies between 1.5 cm and 1.6 cm. Estimated width is 1.51 cm. The doubtful digit is "1".

Calculated Area
1.97 x 1.51 = 2.9747
which rounds to 2.97
(3 significant figures)

$2.9747\,\text{cm}^2$

between

2.85 and $3.2\,\text{cm}^2$

Metric Conversions

core metric prefixes

Mega	kilo	hecto	deca	base unit	deci	centi	milli	micro
M	k	h	da	g, m	d	c	m	μ
10^6	10^3	10^2	10^1	10^0	10^{-1}	10^{-2}	10^{-3}	10^{-6}
					$\left(\frac{1}{10}\right)$	$\left(\frac{1}{10^2}\right)$	$\left(\frac{1}{10^3}\right)$	

move dec to right $\longrightarrow$

$\longleftarrow$ move dec to left