1 $a = 4.72$ to 3 significant figures.

$b = 158$ to 3 significant figures.

Work out the upper bound of $\frac{a}{b}$

You **must** show your working.

[3 marks]

$a_{UB} = 4.725$, $a_{LB} = 4.715$ (1)

$b_{UB} = 158.5$, $b_{LB} = 157.5$

UB of $\frac{a}{b} = \frac{4.725}{157.5}$ (1)

$= 0.03$ (1)

Answer 0.03

2 To be rented, a bedroom must have a floor area of at least $6.51\,m^2$

A bedroom has a rectangular floor.

The floor measures 2.4 m by 2.9 m, each correct to 2 significant figures.

Show that the bedroom can be rented.

[3 marks]

L_B = 2.35 and 2.85 (1)

U_B = 2.45 and 2.95

lowest possible area = 2.35 × 2.85 (1)

= 6.6975 (1)

3 The mass of a baby is 3.6 kilograms to 1 decimal place.

What is the error interval for the mass in kilograms?

Tick **one** box.

[1 mark]

- ☐ $3.5 \leqslant \text{mass} \leqslant 3.6$
- ☐ $3.55 \leqslant \text{mass} \leqslant 3.65$
- ☐ $3.5 \leqslant \text{mass} < 3.6$
- ☑ $3.55 \leqslant \text{mass} < 3.65$

(1)

4 a = 65 to the nearest integer

b = 30 to 1 significant figure

Work out the **upper bound** for $2a^2 - b^2$

You **must** show your working.

[3 marks]

$a_{UB} = 65.5$, $a_{LB} = 64.5$, $b_{UB} = 35$, $b_{LB} = 25$ (1)

UB of $2a^2 - b^2 = 2(65.5)^2 - 25^2$ (1)

$= 2(4290.25) - 625$

$= 8580.5 - 625$

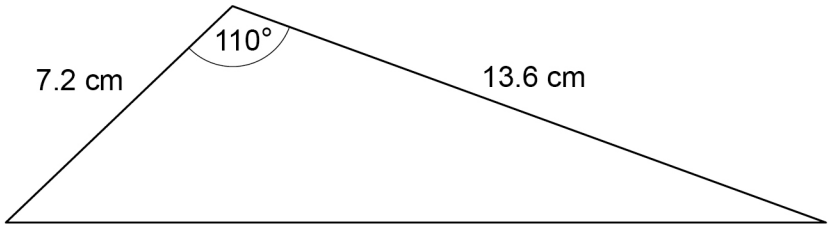
$= 7955.5$ (1)

Answer 7955.5

5 Two sides of a triangle are measured to 1 decimal place.

The angle between the sides is measured to the nearest degree.

Not drawn accurately



Work out the upper bound for the area of the triangle.

You **must** show your working.

[4 marks]

UB : 7.25 , 110.5 , 13.65 (1)

LB : 7.15 , 109.5 , 13.55

(1)

$\text{Area}_{UB} = \frac{1}{2} \times 7.25 \times 13.65 \times \sin 109.5$ (1)

$= 46.64...$ (1)

Answer 46.64 cm^2