

# QT Bounds



1. A rectangle has a length of 14cm, correct to the nearest cm, and a width of 4.3cm, correct to the nearest mm.

- a) Calculate the upper bound for the perimeter of the rectangle. (2 marks)
- b) Calculate the lower bound for the area of the rectangle. (2 marks)

# QT Bounds



2. A circle has a radius of 14cm, correct to the nearest cm.

a) Calculate the upper bound for the circumference of the circle. Give your answer in terms of  $\pi$ .

b) Calculate the upper bound for the area of the circle. Give your answer in terms of  $\pi$ .

3. In the formula  $D = ST$

$S = 15.93$  correct to 2 decimal places

$T = 1.556$  correct to 3 decimal places

Calculate the upper bound for  $D$ . Give your answer to 3 decimal places.

# QT Bounds



4. In the formula  $S = \frac{D}{T}$

$d = 6.73$  correct to 2 decimal places

$t = 3.456$  correct to 3 decimal places

Calculate the upper bound for  $s$ . Give your answer to 3 decimal places.

5. In the formula  $v^2 = u^2 + 2as$

$v = 48.35$  correct to 2 decimal places

$a = 9.81$  correct to 2 decimal places

$s = 45.2$  correct to 1 decimal place

Calculate the upper bound for  $u$ . Give your answer to 3 decimal places.

# QT Bounds



6. A coffee machine dispenses 130ml of black coffee into cups with a capacity of 175ml. These values are correct to 3 significant figures.

Milk is supplied in small cartons which contain 21ml, accurate to the nearest ml. Beryl likes milky coffee and always uses 2 cartons of milk.

Will Beryl's cup ever overflow?

You must show your working.