

Approximation and Estimation – 2021/20 GCSE Mathematics Higher**1. Nov/2021/Paper_J560/06/No.9**

The width, w , of a kitchen cupboard is 60 cm, correct to the nearest centimetre.

(a) Complete the error interval for the width, w .

(a) $\leq w <$ [2]

(b) Six of these kitchen cupboards are to be placed side by side along a kitchen wall.
The wall is 363 cm long, correct to the nearest centimetre.

(i) Show that the six cupboards may **not** fit along the wall. [3]

(ii) Find the upper bound of the space remaining if six cupboards do fit along the wall.

(b)(ii) cm [3]

2. Nov/2020/Paper_J560/04/No.11

- (a) The length, d , of Jamal's car is 4.72 m, correct to 2 decimal places.

Complete the error interval for the length, d .

(a) $\leq d <$ [2]

- (b) Jamal travels 430 km, correct to the nearest 10 km.
His average speed is 57.3 km/h, correct to 1 decimal place.

Calculate the shortest possible time for Jamal's journey.
Give your answer correct to the nearest minute.

(b) hours minutes [5]

3. Nov/2020/Paper_J560/06/No.4

Nina estimates the value of $\sqrt{\left(\frac{3.93 \times 393}{0.546 \times 220}\right)^3}$ by rounding each number to 1 significant figure.

(a) Show that Nina's answer is 64.

[3]

(b) Calculate the error in her estimated answer as a percentage of the exact answer.

(b) % **[4]**