Tolerance

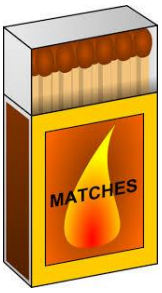
N5 Applications: Geometry & Measure HW

Calculators are permitted but working must be shown.

Essential knowledge:

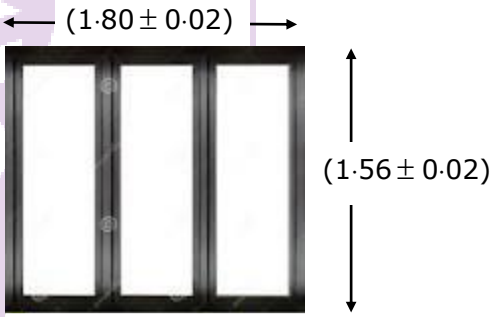
1. Write down the minimum and maximum value for each statement.
(a) (120 ± 5) cm (b) (36.8 ± 0.4) °C (c) 30mph ± 10%

2. A matchmaking company sells them in boxes of 48 ± 3 matches. A random sample of boxes has their contents counted: 52, 47, 45, 46, 50, 43, 54, 51
How many of the boxes are out with company tolerance?



Unit level:

3. A patio door frame has the dimensions shown in metres. Calculate the minimum and maximum areas of the door frame.



4. John is planning to drive to Aberdeen.
Because of heavy traffic and speed limiting cameras, he reckons he can average 45 ± 5 miles per hour.
What is the difference between the fastest time and the slowest time, in minutes, if the distance to Aberdeen is 130 miles?

Assessment level:

5. A nursery is growing plants to be sold in a garden centre. The garden centre will refuse any batch if more than 15% of them are out with a tolerance of (7.1 ± 1.6) cm. Based on the sample shown, will this batch be accepted?

5.8	7.0	6.2
8.4	5.3	8.8
6.8	6.5	6.1
7.6	5.3	6.0
8.5	7.6	6.3
6.7	7.4	5.6

6. A caliper measures the diameter of a walnut as 17.5mm. If the caliper has a tolerance of ± 2 mm, what is the percentage error for the diameter of this walnut? **Round your answer to 3 significant figures**.