

Error Intervals/ Limits of Accuracy – www.m4ths.com

(1) The distance (D) that Bob travels is 20 miles to the nearest 10 miles.

Fill out the inequality below to show the minimum and maximum distance he could have travelled.

$$\underline{\hspace{1cm}} \leq D < \underline{\hspace{1cm}}$$

(2) The distance (D) that Bob travels is 20 miles to the nearest 5 miles.

Fill out the inequality below to show the minimum and maximum distance he could have travelled.

$$\underline{\hspace{1cm}} \leq D < \underline{\hspace{1cm}}$$

(3) The distance (D) that Bob travels is 20 miles to the nearest 1 mile.

Fill out the inequality below to show the minimum and maximum distance he could have travelled.

$$\underline{\hspace{1cm}} \leq D < \underline{\hspace{1cm}}$$

(4) The length of a piece of wood is 5cm correct to the nearest 1cm.

Fred says that the following inequality represents the possible lengths (L) that the piece of wood can take:

$$4\text{cm} \leq L \leq 6\text{cm}$$

(a) State two things wrong with his inequality.

(b) Write the correct inequality to represent the lengths the wood could take.

(5) The length of a piece of wood is 5.2cm and is correct to one decimal place.

Which one of the following inequalities represents the set of values the length could take?

$$5.1\text{cm} \leq L < 5.3\text{cm}$$

$$5.15\text{cm} \leq L \leq 5.25\text{cm}$$

$$5.15\text{cm} \leq L < 5.25\text{cm}$$

$$5.2\text{cm} \leq L < 5.3\text{cm}$$

(6) (a) The number of people in bar is 300 correct to one significant figure.

Find the error interval for the number of people in the bar. (Write an inequality)

(b) Do the same for 2 significant figures!

(7) Find the limits of accuracy of each of the following given that they are each correct to 2 significant figures:

(a) 520

(b) 43

(c) 2.6

(d) 0.65

(e) 1.0

(8) An equilateral triangle has side lengths of 12cm correct to the nearest integer.

Work out the minimum possible perimeter of the triangle.