

GCSE Maths: Error intervals and limits of accuracy (Higher): worksheet

GCSE Maths - Decimals, Rounding and Estimation - Higher - Lesson 4.8

Name: _____

Date: _____

Score: _____

12 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch04-decimals-rounding-estimation/higher/error-intervals-and-limits-of-accuracy/

Exercise 4I Error intervals and limits of accuracy Non-calculator

1 Write down the lower bound and the upper bound of each measurement.

(a) 7.3 cm (correct to 1 decimal place)

Answer: _____

(b) 45 kg (correct to the nearest ten)

Answer: _____

(c) 0.82 (correct to 2 decimal places)

Answer: _____

(d) 2400 people (correct to the nearest hundred)

Answer: _____

(e) 3.5 m (correct to 2 significant figures)

Answer: _____

(f) 6 s (correct to the nearest whole number)

Answer: _____

2 Each number is correct to the accuracy shown. Write down the error interval for each.

(a) 3.4 to 1 decimal place

Answer: _____

(b) 52 to the nearest whole number

Answer: _____

(c) 0.85 to 2 decimal places

Answer: _____

(d) 6700 to the nearest hundred

Answer: _____

(e) 4.5 to 2 significant figures

Answer: _____

(f) 0.062 to 2 significant figures

Answer: _____

3 Each number has been truncated to the accuracy shown. Write down the error interval for each.

(a) 5.3 truncated to 1 decimal place

Answer:

(b) 12 truncated to the nearest whole number

Answer:

(c) 0.47 truncated to 2 decimal places

Answer:

(d) 2400 truncated to the nearest hundred

Answer:

4 A number is 3.4 correct to 1 decimal place. So its error interval is $3.35 \leq x < 3.45$. Could the number be

(a) 3.4

Answer:

(b) 3.45

Answer:

(c) 3.35

Answer:

(d) 3.3499

Answer:

(e) 3.5

Answer:

5 A bag of sugar is labelled 1.5 kg, correct to 1 decimal place. Could the mass of the sugar be

(a) 1.46 kg

Answer:

(b) 1.55 kg

Answer:

(c) 1.449 kg

Answer:

6 A rope is 250 cm long, correct to the nearest 10 cm. A student says a 254 cm rope is possible. Is she right?

Answer:

7 At a match the attendance was reported as 24 000, correct to 2 significant figures. Write down the error interval for the attendance.

Answer:

8 The mass of an elephant is 4.5 tonnes, correct to 1 decimal place. What is the largest possible error in this value?

Answer:

9 Hana says: "x is 3.4 correct to 1 decimal place, so x could be 3.45." Is she right? Explain.

Answer:

10 Joe writes the error interval for 6, correct to the nearest whole number, as $5 \leq x \leq 7$. Write down two mistakes he has made, and write the correct error interval.

Answer:

- 11** A number x is 8.2 when rounded to 1 decimal place and 8.2 when truncated to 1 decimal place. Write down the error interval for x .

Answer:

- 12** The error interval for a number is $4.45 \leq x < 4.55$. The number was rounded. Write down the number and the accuracy to which it was rounded.

Answer:
