Name: ________________________________

GCSE (1 – 9)

Error Intervals

Instructions

• Use black ink or ball-point pen.
• Answer all questions.
• Answer the questions in the spaces provided
  – there may be more space than you need.
• Diagrams are NOT accurately drawn, unless otherwise indicated.
• You must show all your working out.

Information

• The marks for each question are shown in brackets
  – use this as a guide as to how much time to spend on each question.

Advice

• Read each question carefully before you start to answer it.
• Keep an eye on the time.
• Try to answer every question.
• Check your answers if you have time at the end

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1  The weight of a bag of potatoes is 15 kg, correct to the nearest kg.

(a) Write down the smallest possible weight of the bag of potatoes.

\[14.5\text{ kg}\]

(b) Write down the largest possible weight of the bag of potatoes.

\[15.5\text{ kg}\]

(Total for question 1 is 2 marks)

2  The length of a line is 81 centimetres, correct to the nearest centimetre.

(a) Write down the least possible length of the line.

\[80.5\text{ cm}\]

(b) Write down the greatest possible length of the line.

\[81.5\text{ cm}\]

(Total for question 2 is 2 marks)

3  The height of a building is measures as 11 metres, correct to the nearest metre.

(a) Write down the least possible height of the building.

\[10.5\text{ m}\]

(b) Write down the greatest possible height of the building.

\[11.5\text{ m}\]

(Total for question 3 is 2 marks)
4 A number $y$ is rounded to 1 decimal place.

The result is 5.2

Write down the error interval for $y$.

\[ 5.1 \leq y \leq 5.3 \]

\[ 5.15 \leq y < 5.25 \]

(Total for question 4 is 2 marks)

5 A number $y$ is rounded to 1 decimal place.

The result is 14.8

Write down the error interval for $y$.

\[ 14.7 \leq y \leq 14.9 \]

\[ 14.75 \leq y < 14.85 \]

(Total for question 5 is 2 marks)

6 A number $y$ is rounded to 2 decimal places.

The result is 1.51

Write down the error interval for $y$.

\[ 1.50 \leq y \leq 1.52 \]

\[ 1.505 \leq y < 1.515 \]

(Total for question 6 is 2 marks)
7. A number $x$ is rounded to 2 decimal places.

The result is 0.18

Write down the error interval for $x$.

\[ 0.175 \leq x < 0.185 \]

(Total for question 7 is 2 marks)

8. A number $x$ is rounded to 3 significant figures.

The result is 3.69

Write down the error interval for $x$.

\[ 3.685 \leq x < 3.695 \]

(Total for question 8 is 2 marks)

9. A number $x$ is rounded to 3 significant figures.

The result is 2.17

Write down the error interval for $x$.

\[ 2.165 \leq x < 2.175 \]

(Total for question 9 is 2 marks)
10 A number $y$ is rounded to 1 decimal place.

The result is 0.7

Write down the error interval for $y$.

$0.65 \leq y < 0.75$

(Total for question 10 is 2 marks)

11 A number $y$ is rounded to 1 decimal place.

The result is 19.3

Write down the error interval for $y$.

$19.25 \leq y < 19.35$

(Total for question 11 is 2 marks)

12 A number $y$ is rounded to 2 decimal places.

The result is 1.26

Write down the error interval for $y$.

$1.255 \leq y < 1.265$

(Total for question 12 is 2 marks)
13  A number $x$ is rounded to 2 decimal places.

The result is 2.35

Write down the error interval for $x$.

\[
2.34 \leq x < 2.35 \\
2.345 \leq x < 2.355
\]

(Total for question 13 is 2 marks)

14  A number $x$ is rounded to 3 decimal places.

The result is 8.124

Write down the error interval for $x$.

\[
8.123 \leq x < 8.124 \\
8.1235 \leq x < 8.1245
\]

(Total for question 14 is 2 marks)

15  A number $x$ is rounded to 3 significant figures.

The result is 5.67

Write down the error interval for $x$.

\[
5.66 \leq x < 5.68 \\
5.665 \leq x < 5.675
\]

(Total for question 15 is 2 marks)
16 A number $x$ is **truncated** to 1 decimal place.

The result is 6.2

Write down the error interval for $x$.

\[ 6.2 \leq x < 6.3 \]

(Total for question 16 is 2 marks)

17 A number $x$ is **truncated** to 2 decimal places.

The result is 9.58

Write down the error interval for $x$.

\[ 9.58 \leq x < 9.59 \]

(Total for question 17 is 2 marks)

18 A number $x$ is **truncated** to 2 decimal places.

The result is 3.57

Write down the error interval for $x$.

\[ 3.57 \leq x < 3.58 \]

(Total for question 18 is 2 marks)
19 A number $x$ is rounded to 2 significant figures.

The result is 210

Write down the error interval for $x$.

\[ 205 \leq x < 215 \]

(Total for question 19 is 2 marks)

20 A number $x$ is rounded to 3 significant figures.

The result is 0.458

Write down the error interval for $x$.

\[ 0.4575 \leq x < 0.4585 \]

(Total for question 20 is 2 marks)

21 A number $x$ is rounded to 1 significant figure.

The result is 6000

Write down the error interval for $x$.

\[ 5500 \leq x < 6500 \]

(Total for question 21 is 2 marks)