

72. Bounds and Error Intervals

Practice Questions:

1. A length is recorded as 12 cm, rounded to the nearest whole number. Write the error interval for the actual length.

2. A temperature is recorded as 8.4°C , rounded to 1 decimal place. Write the error interval.

3. A distance is recorded as 3.46 km, rounded to 2 decimal places. Find the upper bound.

4. A weight is recorded as 150 g, rounded to 2 significant figures. Write the lower bound.

5. A height is recorded as 700 m, rounded to 1 significant figure. Find the error interval.

72. Bounds and Error Intervals

Practice Questions:

6. A rectangle has a recorded length of 10 cm, rounded to the nearest cm, and a recorded width of 6 cm, also to the nearest cm. Calculate the upper bound for the area.

7. A rectangle's dimensions are 4.5 m by 3.2 m, both rounded to 1 decimal place. Find the the maximum possible area.

8. A rectangle is 8.00 m long and 5.00 m wide, both to 2 decimal places. Find the lower bound for the area.

9. A rectangle is 25 cm by 12 cm, both values rounded to 2 significant figures. Find the minimum possible area.

10. A rectangle is 13.5 cm by 6.8 cm, both rounded to 1 decimal place. Work out the lower bound for the screen area.

72. Bounds and Error Intervals

Scenario Questions:

1. A road sign shows the distance to a town as 18 km, rounded to the nearest kilometre. What is the error interval of possible actual distances?

2. A bottle is labelled as containing 1.5 litres of juice, rounded to 1 decimal place. What is the upper and lower bound for the actual volume?

3. A car's speed is recorded as 70 mph, rounded to the nearest 10 mph. Write the error interval for the actual speed.

4. A plank of wood is 2.00 m long, rounded to 2 decimal places. Find the error interval.

5. A house value is listed as £250,000, rounded to 2 significant figures. What is the upper and lower bound of actual values?

72. Bounds and Error Intervals

Scenario Questions:

6. A rectangular window is measured to be 1.2 m wide and 1.5 m tall, both to 1 decimal place. Calculate the maximum potential glass area.

7. A rectangular rug is labelled as 2.0 m by 3.0 m, each to the nearest 0.5 m. What is the lower bound the floor area it might cover?

8. A rectangular phone screen is said to be 14.2 cm by 6.9 cm, with both measurements rounded to 1 decimal place. Find the upper bound for visible screen area.

9. A rectangle has a length of 5.2 m and a width of 3.7 m, both rounded to 1 decimal place. Find the upper bound for the perimeter.

10. A square tile has a side length of 12 cm, measured to the nearest centimetre. Work out the upper bound for the area of the tile.

ANSWERS

Topic 72. Bounds and Error Intervals

Practice Questions:

- | | |
|---|----------------------------|
| 1. $11.5 \text{ cm} \leq \text{length} < 12.5 \text{ cm}$ | 6. 68.25 m^2 |
| 2. $8.35^\circ\text{C} \leq \text{temp} < 8.45^\circ\text{C}$ | 7. 19.7925 m^2 |
| 3. 3.465 km | 8. 39.935025 m^2 |
| 4. 145 g | 9. 281.75 cm^2 |
| 5. $650 \text{ m} \leq \text{height} < 750 \text{ m}$ | 10. 90.7875 cm^2 |

Scenario Questions:

- | | |
|---|---------------------------|
| 1. $17.5 \text{ km} \leq \text{distance} < 18.5 \text{ km}$ | 6. 1.9375 m^2 |
| 2. LB = 1.45 Litres, UB = 1.55 Litres | 7. 4.8125 m^2 |
| 3. $65 \text{ mph} \leq \text{speed} < 75 \text{ mph}$ | 8. 99.0375 m^2 |
| 4. $1.995 \text{ m} \leq \text{length} < 2.005 \text{ m}$ | 9. 18.0 m |
| 5. LB = £245,000, UB = £255,000 | 10. 156.25 cm^2 |

crackmaths