SCIENCE FOUNDATIONS

Rounding measurements

Difficulty level: Intermediate

Science Foundations

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Overview of the concept

This is how you give a sensible answer when measuring a room for flooring, instead of claiming a length to the nearest hair when your tape measure only reads millimetres. A flooring installer who orders material to the nearest millimetre is pretending the tape is more precise than it is. A carpenter rounds a measurement to what the saw can actually cut. Knowing how to round measurements tells you how to report a number honestly, with the precision your tool really gave you and no more.



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Rule

Rounding measurements: look at the next digit after the one you are keeping.

If it is 5 or more, round the kept digit up, and if it is less than 5, leave the kept digit as it is.

Worked examples

EXAMPLE 1

Q Round 12.46 cm to one decimal place.

SOLUTION

Find the digit to keep: the 4 in the tenths place.

Look at the next digit: 6, which is five or more.

Round the kept digit up: 4 becomes 5.

The result is 12.5 cm.

EXAMPLE 2

Q Round 3.742 m to two decimal places.

SOLUTION

Find the digit to keep: the 4 in the hundredths place.

Look at the next digit: 2, which is less than five.

Leave the kept digit alone.

The result is 3.74 m.

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Practice questions

1. Round 8.46 to one decimal place. 8.46 lies between 8.4 and 8.5. What does it round to?

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2. Round 5.738 to two decimal places. 5.738 lies between 5.73 and 5.74. What does it round to?

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3. Round 7.5 to the nearest whole number. 7.5 is exactly halfway between 7 and 8. What does it round to?

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4 Round 7.4 to the nearest whole number. 7.4 lies between 7 and 8. What does it round to?

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5 Round 15.55 to one decimal place. 15.55 is exactly halfway between 15.5 and 15.6. What does it round to?

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6 Round 0.046 to two decimal places. 0.046 lies between 0.04 and 0.05. What does it round to?

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7 **Round 123.6 to the nearest whole number. 123.6 lies between 123 and 124. What does it round to?**

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8 **Round 8.95 to one decimal place. 8.95 sits exactly halfway between 8.9 and 9.0. What does it round to?**

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9 A number sits exactly halfway between 7 and 8. If the next digit is 5, what do you do?

- **A** Round the kept digit up
- **B** Round the kept digit down
- **C** Leave the kept digit alone
- **D** Drop the next digit and stop

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10 Round 9.631 to two decimal places. 9.631 lies between 9.63 and 9.64. What does it round to?

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ANSWER KEY

1. 8.5

2. 5.74

3. 8

4. 7

5. 15.6

6. 0.05

7. 124

8. 9.0

9. Round the kept digit up

10. 9.63

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