

0	1
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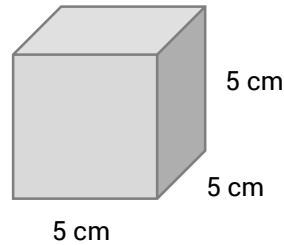
A factory produces steel components for use by a number of different companies. The density of the steel used by the factory is 8000 kg/m^3 .

0	1
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 .

1

A particular steel cube produced by the factory has a side length of 5 cm.



Calculate the **mass** of one of these cubes. Write your answer in kilograms.

Mass = _____ kg

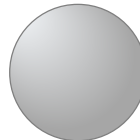
[3 marks]

0	1
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 .

2

The factory also produces a 10 g steel ball bearing.



Calculate the radius of this ball bearing.
Include the unit with your answer.

Remember that the equation for the volume of a sphere is $V = \frac{4}{3}\pi r^3$.

Radius = _____ Unit = _____

[5 marks]

0	2
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A student uses below setup to measure the density of water.



The steps which they take in their investigation are as follows:

- Use measuring cylinder to measure out 200 cm^3 of water
- Pour water into beaker
- Turn on and zero electronic balance
- Place beaker containing water onto balance
- Measure mass

0	2	.	1
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Identify the mistake in the method used by the student.

[1 mark]

0	2	.	2
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What is the name given to this type of error?

[1 mark]

0	2	.	3
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The actual density of water is 1 g/cm^3 . Using the incorrect method above, will the student calculate a value for the density of water which is less than or greater than this value? Explain your answer.

[3 marks]