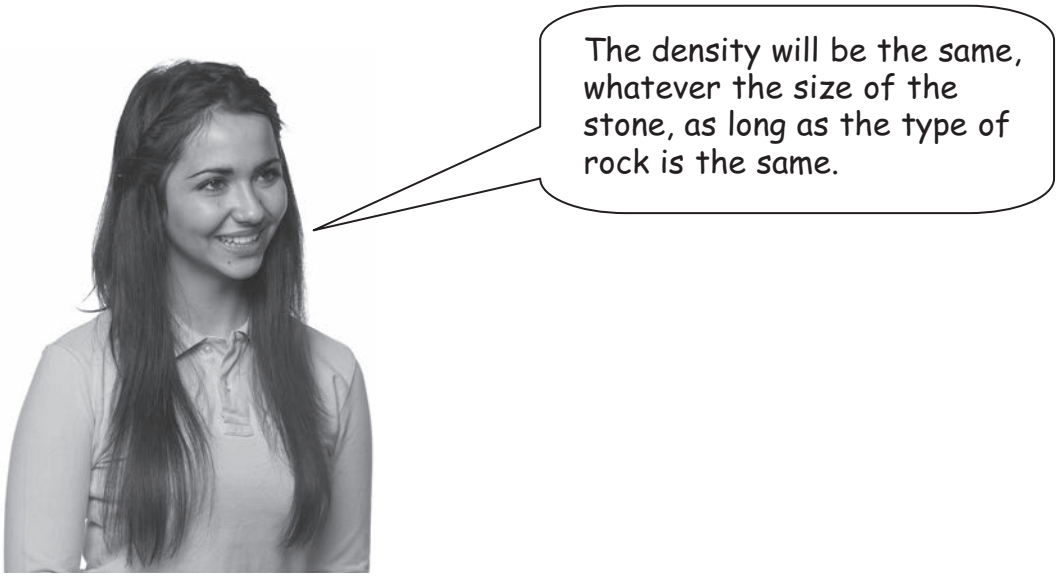
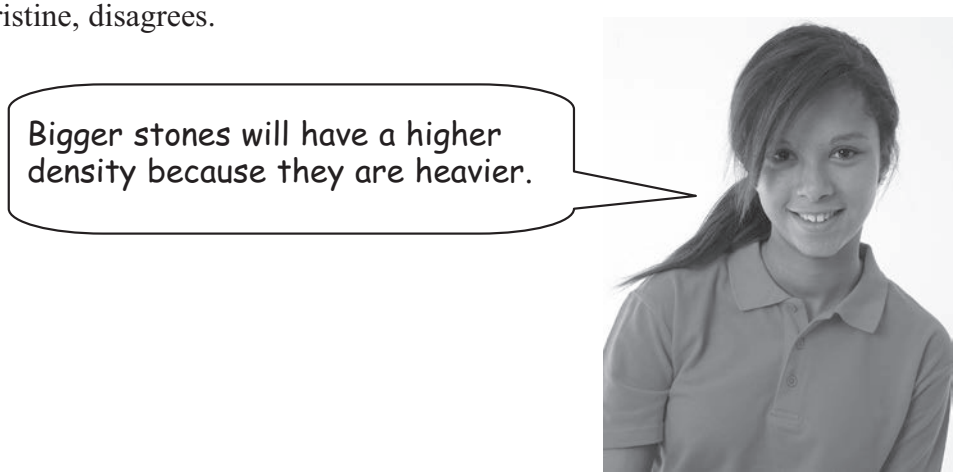
5 Kalpana finds a small stone.

To help her identify the type of stone, Kalpana decides to find its density.

Kalpana explains why she thinks this will help.



Her friend, Christine, disagrees.



(a) Who is correct – Kalpana or Christine?

(2)

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Explain your answer.

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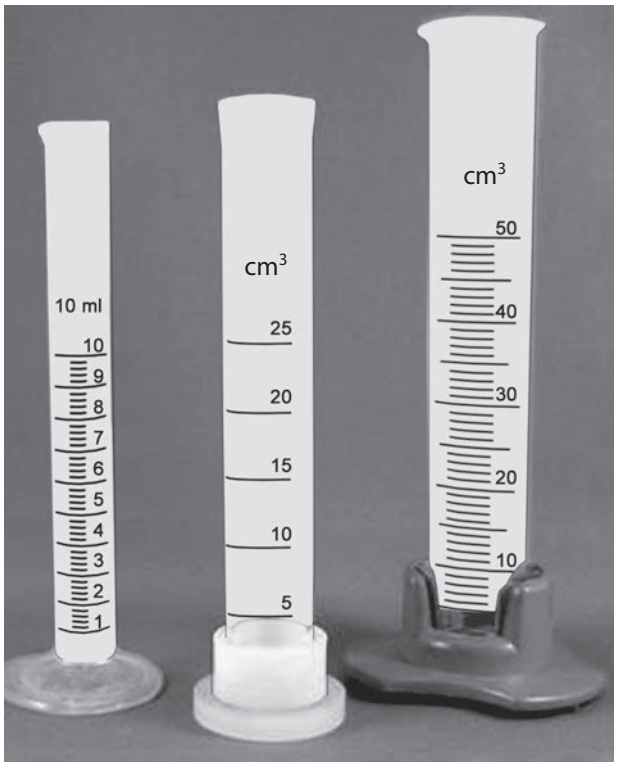
(b) Kalpana uses a measuring cylinder to find the volume of water displaced by the stone.

She has three measuring cylinders to choose from.



A **B** **C**

(i) Which measuring cylinder would give the most **precise** measurement? Explain your answer.

(2)

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(ii) The most precise measuring cylinder may not give an **accurate** reading.

Suggest why.

(1)

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(c) The table shows the measurements that Kalpana makes.

Mass of stone in g	Volume of stone in cm^3
54	23

(i) State the equation linking density, mass and volume.

(1)

(ii) Calculate the density of the stone.

State your answer to an appropriate number of significant figures.

Give the unit.

(3)

Density = ... Unit .....

(d) (i) How can Kalpana use her value of density to identify the type of stone?

(2)

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(ii) Kalpana may still be unsure about the type of stone.

Suggest why.

(1)

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(Total for Question 5 = 12 marks)