1. An object with a mass of 17.0 kg displaces 2.5 L of water when placed in a large overflow container. Calculate the density of the object.

$$D = \frac{m}{V}$$
$$= \frac{17}{2.5}$$
$$= 6.8$$

∴ the density is 6.8 kg/L

$M = 17.0$ kg.
$V = 25$ L
$D = ?$

2. Calculate the mass of a liquid with a density of 2.2 g/mL and a volume of 35.0 mL

$$D = \frac{m}{V}$$
$$2.2 = \frac{m}{35} \quad M = 77 g$$

∴ the mass is 77 g.

$D = 2.2$ g/mL
$V = 35.0$ mL
$M = ?$

3. A 600 mL bottle of a liquid has a mass of 678.22 g.

(a) What is the density of the liquid? (Answer to 3 decimal places)

$$D = \frac{m}{V} = \frac{678.22}{600} = 1.130$$

∴ the density is 1.130 g/mL

$m = 678.22$ g
$v = 600$ mL
$D = ?$

(b) What volume container would be required to store 3 kg of the liquid from question? (answer to the nearest mL)

$$D = \frac{m}{V}$$
$$1.13 = \frac{3000}{V}$$
$$1.13 V = 3000$$
$$V = 2654.86$$

∴ the volume would be 2655 mL.

$D = 1.13$ g/mL
$m = 3$ kg
$= 3000$ g
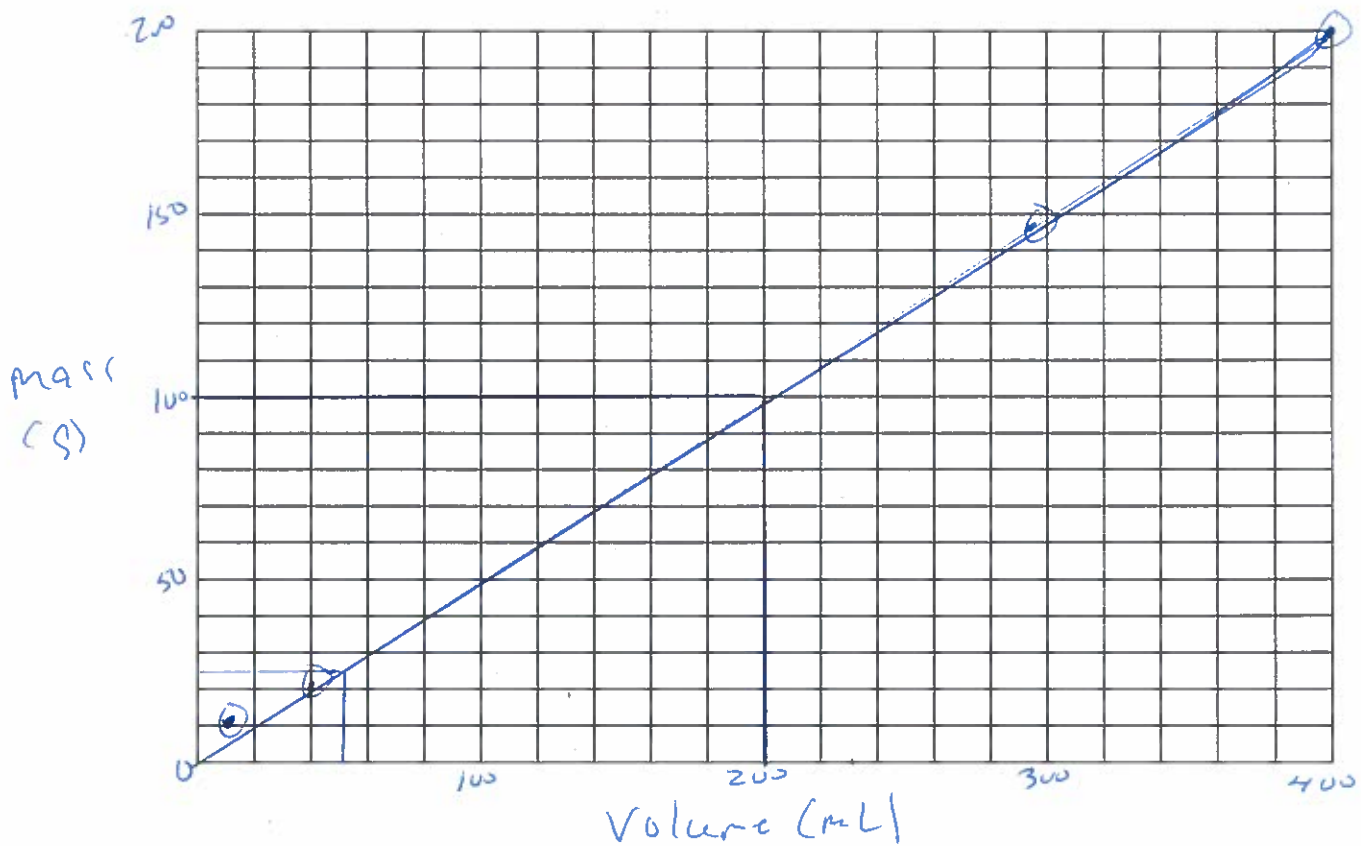$V = ?$

4. The data table gives the mass and volume of different blocks.
   Make a line graph, using the data, by placing volume on the x-axis and mass on the y-axis

Mass and Volume of Blocks

Block	Mass (g)	Volume (mL)
1	4.9	10.2
2	20.4	41.0
3	145.8	292.6
4	200.0	398.9

What is the mass of the block when the volume is 50 mL?   (1 mark)

25 g

What is the volume of the block when it has a mass of 100 g?   (1 mark)

200 mL