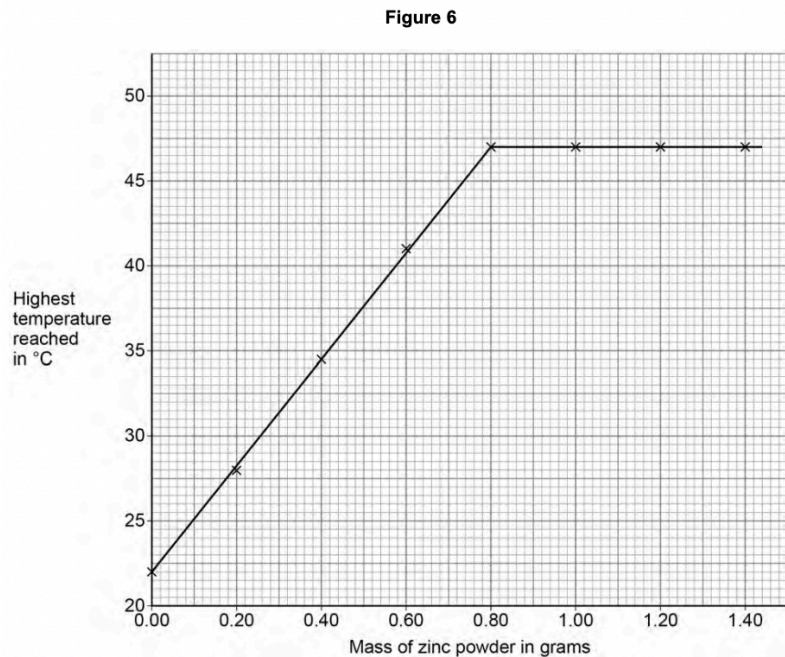


## (Limiting reactants)

Q1.a)(2024)

Figure 6 shows the results.



What is the minimum mass of zinc powder needed to react with all the copper sulfate solution?

Use **Figure 6**.

[1 mark]

Minimum mass of zinc powder = \_\_\_\_\_ g

Q1.b)(2024)

What is the maximum temperature change in the reaction between zinc powder and 25 cm<sup>3</sup> of copper sulfate solution?

Use **Figure 6**.

[2 marks]

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Maximum temperature change = \_\_\_\_\_ °C

Q1.c)(2024)

## Energy Change

<http://www.pcfgstudy.com>

25 cm<sup>3</sup> of copper sulfate solution contained 6.75 g of copper sulfate.

Calculate the concentration of the solution in g/dm<sup>3</sup>.

You should:

- calculate the volume of the solution in dm<sup>3</sup> (1000 cm<sup>3</sup> = 1 dm<sup>3</sup>)
- use the equation:

$$\text{concentration of solution in g/dm}^3 = \frac{\text{mass of copper sulfate in grams}}{\text{volume of solution in dm}^3}$$

[3 marks]

Volume of solution = \_\_\_\_\_ dm<sup>3</sup>

Concentration of solution = \_\_\_\_\_ g/dm<sup>3</sup>