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Metals are extracted from their ores. Many copper ores contain only 2% of copper compounds.

Copper is now extracted from ores containing a low percentage of copper compounds.

Suggest two reasons why. **[2 marks]**

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0 1 . 2

The extraction of pure copper is expensive. Give one reason why. **[1 mark]**

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0 1 . 3

Large areas of land are contaminated with copper compounds. Phytomining can be used to remove these copper compounds from the land.

What is used in phytomining to remove copper compounds from the land? **[1 mark]**

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0 2 . 1

Copper is produced from copper sulfate solution by displacement using scrap iron or by electrolysis.

During the electrolysis of copper sulfate solution, which electrode do the copper ions move towards?

Give a reason for your answer. **[2 marks]**

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Give two reasons why scrap iron is used to displace copper.  
Use the Chemistry Data Sheet to help you to answer this question.

**[2 marks]**

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Complete the word equation.

**[2 marks]**

copper (II) sulfate + iron  $\rightarrow$  ..... + .....

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4
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Write the balanced symbol equation.

**[2 marks]**

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**(Total 12 marks)****End**