

- (e) (i) Calculate the gradient of your graph at the origin, 0.00 A and use this value to calculate the resistance of the filament bulb at this point. [3]

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- (ii) Determine the resistance of the bulb at 0.80 A. [2]

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- (iii) By comparing your results in (e)(i) and (e)(ii), state and explain what happens to the resistance of the bulb as the current increases. [2]

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- (f) (i) If you carried out the same experiment with a fixed resistor instead of the filament bulb, what shape graph would you expect to get? [1]

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- (ii) If you then repeated the experiment with a larger **fixed** resistor, what would happen to the graph? [1]

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