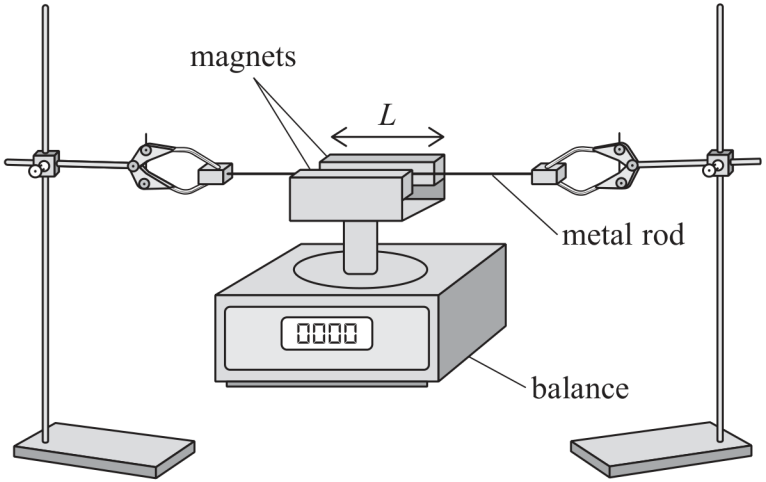
13 A student clamped a metal rod horizontally in a uniform magnetic field as shown.

The student connected the ends of the metal rod to a power supply, an ammeter and a switch in a series circuit. When the student closed the switch there was a current in the metal rod.



When the switch was closed, the reading on the balance increased by 2.8 g. The reading on the ammeter was 3.6 A.

The flux density of the magnetic field was 120 mT.
The length of the rod in the magnetic field was L.

Calculate L.

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L = ...

(Total for Question 13 = 3 marks)