



The Cost of Electricity

Workbook
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Q1 Boris puts his 2 kW electric heater on for 3 hours.

a) Calculate how many kilowatt-hours of electrical energy the heater uses.

Energy used = $2\text{kW} \times 3\text{h} = 6\text{ kWh}$

b) Boris gets his electricity supply from Ivasparkco. They charge 7p per kilowatt-hour. Work out the cost of the energy calculated in part (a).

$6\text{ kWh} \times 7\text{ p} = 42\text{ p}$



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Q2 Calculate the cost of using a 100 W lamp for 10 hours, if electrical energy costs 11.3p per kWh.

$100\text{W} = 0.100\text{ kW}$ (power must be in kilowatts - time in hours)

$0.1\text{ kW} \times 10\text{h} = 1\text{ kWh}$ So the cost = 11.3p

You need to turn 100 W into kilowatts first.

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Q3 Tina's mum grumbles at her for leaving a 60 W lamp on overnight — about 9 hours every night. Tina says her mum uses more energy by using an 8 kW shower for 15 minutes every day.

Is Tina right? Calculate how much energy each person uses and compare your results.

60W lamp $60\text{ W} = 0.060\text{ kW}$ (power must be in kW)

$0.060\text{ kW} \times 9\text{ h} = 0.54\text{ kWh}$

8 kW shower $15\text{ mins} = 0.25\text{h}$ (time must be in hours)

$8\text{ kW} \times 0.25\text{h} = 2\text{ kWh}$ - Tina is right!!

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Q4 Mr Havel recently received his electricity bill. Unfortunately, he tore off the bottom part to write a shopping list.

a) How many kWh of energy did Mr Havel use in the three months from June to September?

$34783 - 34259 = 524\text{ kWh}$

b) What would the bill have said for 'total cost'?

$524 \times 9.7 = 5082.8\text{p} = \text{£}50.83$

Customer : Havel, V

Date Meter Reading

11 06 06 34259
10 09 06 34783

Total Cost @ 9.7p per kWh

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