

# Electricity

## Units

Number of units used = Present Reading — Previous Reading (subtracting)

Eg1) An electricity bill is charged as follows

1) A standing charge of €26.80

2) 1256 units used charged at 23cent per unit.

3) VAT at 23% on the total bill

Find the total cost of the bill

26.80 SC

Cost of units  $1256 \times \underline{0.23} = €288.88$

Bill  $26.80 + 288.88 = 315.68$  Total

$315.68 \times 23\% = \overset{\text{VAT}}{72.61}$

Total Bill SC + Units used + VAT

$26.80 + 288.88 + 72.61 = €388.29$

New 68 Q 3

OLD 53 Q3



## Section 4.2 Household bills

### Example 1

Calculate the electricity bill from the information given below:

Standing charge: €18.60

Present meter reading: 38423

Previous meter reading: 37483

Cost per unit: 23 cent

VAT on total bill: 13%

## Exercise 4.2

1. A householder's electricity bill is charged in the following way:

- (i) A standing charge of €26.80
- (ii) 1256 units at 23c per unit
- (iii) VAT at 13% on the total bill.

Find the total amount of the electricity bill.

2. A supplier charges for electricity supplied in the following way:

*Day rate:* 24c per unit      *Night rate:* 10.5c per unit.

Calculate the electricity bill for each of the following users based on the unit rates given above. VAT at  $12\frac{1}{2}\%$  is added to each bill.

Name	No. of units used at day rate	No. of units used at night rate	Standing Charge
D. Maher	420	130	€28.90
G. O'Gorman	560	370	€25.60

HW

3. Mrs Heaton received a bill of €130.80 for electricity used in a two-month period.

The bill included a standing charge of €25.20.

If each unit of electricity cost 22 cent, find how many units were used.

HW

3. Mrs Heaton received a bill of €130.80 for electricity used in a two-month period. The bill included a standing charge of €25.20. If each unit of electricity cost 22 cent, find how many units were used.

4. Rachel's gas meter was read on 1 March. The reading was 

1	7	4	2
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 92 days later the meter was read again. The reading was 

1	9	5	6
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 Calculate the total gas bill that Rachel will have to pay for the 92 days from 1 March if VAT at 13% is added.

<b>QAQ GAS SUPPLIES</b>
CHARGES:
Standing charge – 28c per day
Gas used – 84c per unit

5. A householder is charged for the gas that he uses in the following way:

Standing charge €26.30.

Reducing rate for therms used:

0–20 therms: €1.40 per therm

21–40 therms: €1.26 per therm

over 40 therms: €1.06 per therm.

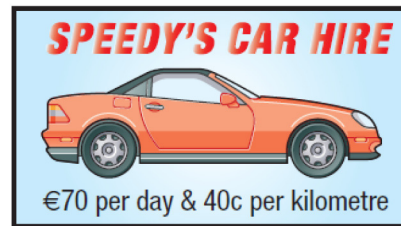
Calculate the householder's bill for a period in which he uses 54 therms and VAT at  $12\frac{1}{2}\%$  is added.

6. John hired the car for 8 days and drove 850 kilometres.

(i) How much did the hire of the car cost him?

(ii) Elaine hired a similar car for 10 days.

If her bill for hiring the car amounted to €1610, how many kilometres did she travel?



7. Alan earns €12.80 per hour for working a basic week of 38 hours.

Overtime is paid at 'time and a half'.

The table below shows the hours Alan worked last week.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Hours	10	8	7	9	12

- (i) How many hours overtime did he work last week?
- (ii) Calculate his total pay for last week.
- (iii) If Alan earned €582.40 in a particular week, how many hours overtime did he work?

8. *Eircom* charges 15c for each metered unit used. If each local call uses 1 unit every 3 minutes (or part thereof) during peak time, calculate the cost of each of these local calls made at peak time:

	Starting time	Finishing time
(i)	9.07 a.m.	9.12 a.m.
(ii)	12.49 p.m.	1.04 p.m.
(iii)	11.54 a.m.	12.16 p.m.

**9.** The charges for Olivia's 'bill-pay' phone per month are as follows.

Fixed charge: €15

Call charges: First 50 minutes free.  
Additional minutes, 18 cent per minute.

Text messages: First 100 text messages free.  
Additional text messages, 14 cent each.

During June, Olivia used 120 minutes call-time and sent 128 text messages.

- (i) Calculate the charge for all her phone calls.
- (ii) Find the total amount of her bill for the month.

During July, Olivia used 143 minutes call-time and sent  $x$  text messages.

- (iii) If her bill amounted to €39.02, find the value of  $x$ .

**10.** When Anna uses her car on a business trip, she is allowed to claim 68 cent per km for the first 80 km and 42 cent per kilometre for the rest of the journey.

- (i) How much can she claim for a 135 km journey?
- (ii) On one occasion she claimed €119.08. How far did she travel?

**11.** Kate wants a smartphone.

These are the tariffs offered.

If Kate wants to use her phone for at least 120 minutes per month (but always less than 143), which tariff should she choose for the cheapest deal?

Tariff	Cost/month	Call cost/min
1	€15	40c
2	€24	26c
3	€30	15c
4	€40	8c

## Answers

### Exercise 4.2

1. €356.72
2. Uaher – €161.27; O’Gorman – €223.71
3. 480
4. €232.24
5. €106.13
6. (i) €900 (ii) 2275 km
7. (i) 8 (ii) €640 (iii) 5
8. (i) 30c (ii) 75c (iii) €1.20
9. (i) €12.60 (ii) €31.52 (iii) 152
10. (i) €77.50 (ii) 234 km
11. Tariff 3