

## **Module 7: Developing the personal maths skills of teachers and assessors**

### **Developmental task**

#### **Number**

#### **Personal and public life context**

##### **Fuel bills**

Marie buys gas and electricity from the same supplier, and pays by direct debit. In one year she uses 20 100 units of gas and 3 300 units of electricity. She is thinking of changing supplier.

Refer to the sheet of domestic fuel tariffs below, and use it to advise Marie on which of the four suppliers she should choose.

Plot a graph to show how Marie's fuel bills would vary with each of the four suppliers for consumption of between 10 000 and 20 000 units of gas each year. At what levels of consumption would a different supplier be cheaper?

Marie is thinking about how she could insulate her home better to reduce her gas bills. Marie gets a quote for loft insulation of £1,300 inc. VAT. The company claims that this is likely to reduce her gas bills by about 20%. Advise Marie about whether it is worth her paying for the loft insulation, explaining your reasoning and stating any assumptions made.

## Domestic fuel tariffs

<b>Energycos SaveOnline</b> (Prices include VAT)			
<b>Electricity</b>	Normal units first 900kWh per year	22.712p per kWh	<b>Fixed monthly direct debit</b> Direct debit discount @ 6.00%
	Normal units	11.96p per kWh	
<b>Gas</b>	Normal units first 2680kWh per year	8.23p per kWh	
	Normal units	3.581p per kWh	

<b>UPM Energy</b> (Prices include VAT)			
<b>Electricity</b>	Fixed charge £/Yr	£66.15	<b>Paper free billing</b> £20 per year discount
	Unit charge	£0.1092 per kWh	
<b>Gas</b>	Fixed charge £/Yr	£63.00	
	Unit charge	£0.0369 per kWh	

<b>Eastern Power</b> (Prices include VAT)			
<b>Electricity</b>	First 225kWh each quarter	17.66p per kWh	<b>Monthly direct debit</b> Dual fuel direct debit discount @ 2.00%
	Remaining units	12.45p per kWh	
	Yearly standing charge	£53.70	
<b>Gas</b>	First 670kWh each quarter	9.37p per kWh	
	Remaining units	4.29p per kWh	
	Yearly standing charge	£49.80	

<b>RK-Electric</b> (Excl. 5% VAT)			
<b>Electricity</b>	First 900kWh per year	21.250 per kWh	<b>Gas and electricity offer</b> Annual discount of £16.80 (excl. VAT) is available for dual fuel customers paying by monthly direct debit.
	Other units	10.681 per kWh	
<b>Gas</b>	Normal units first 2680kWh per year	7.772p per kWh	
	Normal units	3.548p per kWh	