Bands Worksheet 1

This exercise will cover the following:

- Working with calculations through bands
- Includes Tax calculations (simplified)

Exercise Name: Worksheet

The exercise begins:

Question 1:

Licence Fee Bands

A company pays an annual licence fee based on its sales (in £). The licence fee bands are:

- 0% on sales up to £20,000
- 5% on the portion of sales over £20,000 up to £50,000
- 10% on the portion of sales over £50,000 up to £150,000
- 15% on the portion of sales over £150,000

If a company's sales in a year are £210,000, how much licence fee must it pay?

ANSWER:

Band	**Portion of Sales in Band**	**Rate**	**Fee for Band**	**Explanation**
Band 1	Up to £20,000	0%	£0	0% of first £20,000
Band 2	£20,001 to £50,000 → £50,000 − £20,000 = **£30,000**	5%	£30,000 × 0.05 = **£1,500**	Portion from 20,001 up to 50,000
Band 3	£50,001 to £150,000 → £150,000 − £50,000 = **£100,000**	10%	£100,000 × 0.10 = **£10,000**	Portion from 50,001 up to 150,000
Band 4	Over £150,000 → £210,000 − £150,000 = **£60,000**	15%	£60,000 × 0.15 = **£9,000**	Portion above 150,000
Total Licence Fee	—	—	**£20,500**	Sum of all bands: 0 + 1,500 + 10,000 + 9,000

So the company must pay **£20,500**.

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Question 2:

Scottish Income Tax (2025-26 example)

Assume the following simplified Scottish income tax bands:

- 0% personal allowance up to £12,570
- 19% starter rate on taxable income from £12,570 to £15,397
- 20% basic rate on taxable income from £15,397 to £27,491
- 21% intermediate rate on taxable income from £27,491 to £43,662
- 42% higher rate on taxable income from £43,662 to £75,000
- 45% advanced rate on taxable income from £75,000 to £125,140
- 48% top rate on taxable income over £125,140

If Elmer Chan has a taxable income of £92,521, how much income tax will they pay under this system, rounded off to nearest whole £ for each calculation?

ANSWER:

Band	Income in Band	Rate	Tax on that Band	Explanation
Personal Allowance	Up to **£12,570**	0%	*£12,570* x 0 = 0	Personal Allowance zero rated for all – to be included
Band 1 (starter)	£15,397 − £12,570 = **£2,827**	19%	*£2,827* × 0.19 = **£537**	
Band 2 (basic)	£27,491 − £15,397 = **£12,094**	20%	*£12,094* × 0.20 = **£2,419**	
Band 3 (intermediate)	£43,662 − £27,491 = **£16,171**	21%	*£16,171* × 0.21 = **£3,396**	
Band 4 (higher)	£75,000 − £43,662 = **£31,338**	42%	*£31,338* × 0.42 = **£13,162**	
Band 5 (advanced)	£92,521 - £75,000 = **£17,521**	45%	*£17,521* x 0.45 = **£7,884**	Income is £92,521 – all the taxable income used, not full amount of threshold (see below)
Band 6 (top)	—	48%	**£0**	Income £92,521 is below the > £125,140 for top rate
Total Tax Payable	—	—	**Total Tax Payable: £27,398**	Sum: 537 + 2419 + 3396 + 13162 + 7884 = **£27,398**

So Elmer Chan's income tax is **£27,398**

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Question 3:

Electricity Usage Charge Bands

An electricity provider charges customers as follows per year:

- First 2,000 kWh at £0.10 per kWh
- Next 3,000 kWh (i.e. from 2,001 to 5,000) at £0.15 per kWh
- Next 5,000 kWh (i.e. from 5,001 to 10,000) at £0.20 per kWh
- Any usage above 10,000 kWh at £0.25 per kWh

If a household uses 12,350 kWh in a year, what is their total charge?

ANSWER:

Electricity Usage Charge (Simplified)

Band	**Usage in Band**	**Rate**	**Charge for Band**	**Explanation**
Band 1	First 2,000 kWh	£0.10	2,000 × £0.10 = **£200.00**	
Band 2	Next 3,000 kWh (2,001-5,000) → **3,000** kWh	£0.15	3,000 × £0.15 = **£450.00**	
Band 3	Next 5,000 kWh (5,001-10,000) → **5,000** kWh	£0.20	5,000 × £0.20 = **£1,000.00**	
Band 4	Above 10,000 → 12,350 − 10,000 = **2,350** kWh	£0.25	2,350 × £0.25 = **£587.50**	
Total Charge	—	—	**£2,237.50**	Sum of all bands: 200 + 450 + 1,000 + 587.50

So the total electricity charge is **£2,237.50**

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Question 4:

Customs Duty Bands for Import Tariffs

A customs authority imposes duties on imported goods based on their declared value (in £) as follows:

- 0% duty up to £1,000
- 2% duty over £1,000 up to £5,000
- 5% duty over £5,000 up to £20,000
- 10% duty over £20,000

If goods are imported with a declared value of £28,750, what is the total duty payable?

ANSWER:

Customs Duty Bands

Band	**Value in Band**	**Rate**	**Duty for Band**	**Explanation**
Band 1	Up to £1,000	0%	£0	
Band 2	£5,000 − £1,000 = **£4,000**	2%	£4,000 × 0.02 = **£80.00**	
Band 3	£20,000 − £5,000 = **£15,000**	5%	£15,000 × 0.05 = **£750.00**	
Band 4	Over £20,000 → £28,750 − £20,000 = **£8,750**	10%	£8,750 × 0.10 = **£875.00**	
Total Duty Payable	— Double check total	—	**£1,705.00**	Sum of: 0 + 80 + 750 + 875

So the total duty payable is **£1,705.00**

The exercise ends. Check your work.