

Bands Worksheet 2

This exercise **worksheet 2** will cover the following:

- Working with calculations through bands
- Includes Band calculations (simplified versions)

Exercise Name: Worksheet

The exercise begins:

Question 1:

Water Usage Charges

A water company charges as follows per year (simplified version):

- First 50 cubic metres at £0.80 per cubic metre
- Next 100 cubic metres (50–150) at £1.20 per cubic metre
- Next 200 cubic metres (150–350) at £1.50 per cubic metre
- Any usage above 350 cubic metres at £2.00 per cubic metre

If a business uses 420 cubic metres in a year. What is the total water charge?

ANSWER:

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Question 2:

Progressive Property Tax

A city imposes property tax based on the value of the property (in £):

- 0.5% on value up to £150,000
- 1.0% on the portion over £150,000 up to £400,000
- 1.5% on the portion over £400,000

What is the property tax on a house valued at £550,000?

ANSWER:

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Question 3:

Graduated Pension-Withdrawal Charge

A pension scheme charges a fee on withdrawals in bands:

- First £10,000 at 2%
- Next £20,000 at 4%
- Next £30,000 at 6%
- Above £60,000 at 8%

If someone withdraws £85,000 in a year, what is the total charge?

ANSWER:

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Question 4:

Import VAT Bands

A country has an import-VAT regime:

- 0% VAT on declared value up to £500
- 5% on the portion over £500 up to £2,000
- 20% on the portion over £2,000

If you import goods worth £3,750, what is the total VAT payable?

ANSWER:

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Question 5:

Corporate Bonus Tiers

A company gives end-of-year bonuses based on profit share as follows:

- 5% of profits up to £100,000
- 10% on the next £200,000 (i.e. from £100,000 to £300,000)
- 15% on profits above £300,000

If profits are £480,000, what is the bonus amount?

ANSWER:

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Question 6:

Gym Membership Discount Bands

A gym offers discounted rates on membership fees based on years of membership:

- Year 1: full fee £500
- Years 2 to 4: 10% discount (so 90% of full fee each year)
- Years 5 to 9: 20% discount
- Year 10 onwards: 30% discount

Over 12 years, what is the total amount paid, assuming full fee remains £500 each year?

ANSWER:

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Question 7:

Private Health Insurance Premium Bands

A health insurance company charges premiums based on age bands:

- Ages up to 25: £200 per year
- Ages 26–40: £350 per year
- Ages 41–60: £600 per year
- Ages over 60: £1,000 per year

What is total premium paid from age 20 through age 65 (inclusive of every year of age within band), assuming you pay each year in the band you're in?

ANSWER:

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Question 8:

Tiered Shipping Costs

A shipping company charges for packages by weight using a tiered charge:

- Up to 2 kg: £3 per kg
- Over 2 kg up to 10 kg: £5 per kg for the portion over 2 kg
- Over 10 kg: £10 per kg for the portion over 10 kg

What is the shipping cost of a 15 kg package?

ANSWER:

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Question 9:

University Tuition Fee Bands

A university charges tuition fees based on the number of credits:

- First 30 credits at £250 each
- Next 30 credits at £200 each
- Next 60 credits at £150 each
- Any credits over 120 at £100 each

If a student takes 150 credits in a year, what is their fee?

ANSWER:

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Question 10:

Progressive Sales Commission

A salesperson earns commission on sales in yearly bands:

- 2% on sales up to £50,000 (for the first £50,000)
- 5% on the next £100,000 (i.e. from £50,000 to £150,000)
- 7% on the next £200,000 (from £150,000 to £350,000)
- 10% on anything above £350,000

If the salesperson's sales in the year are £480,000, how much commission do they earn?

ANSWER:

The exercise worksheet ends. Check your work.