



# LEVEL 3 CORE MATHS

Mrs Williams

# What is taught...

PAPER 1 (calculator) (60 marks – 90 minutes)

- Analysis of data
- Maths for personal finance
- Estimation

PAPER 2 (calculator) (60 marks – 90 minutes)

- Critical analysis of given data and models
- Critical path analysis
- Expectation
- Cost benefit analysis

# Starter:

Estimate the length of time you spend travelling to and from work in a year.

# Income tax and personal allowances

How much Income Tax you pay in each tax year depends on:

- how much of your income is above your Personal Allowance
- how much of your income falls within each tax band
- The standard Personal Allowance is £12,570, which is the amount of income you do not have to pay tax on.
- The money raised from taxes goes to pay for essential products and services. Schools, emergency services, roads and healthcare are some of the major things we benefit from by paying taxes.

Band	Taxable income	Tax rate
<b>Personal Allowance</b>	Up to £12,570	0%
<b>Basic rate</b>	£12,571 to £50,270	20%
<b>Higher rate</b>	£50,271 to £125,140	40%
<b>Additional rate</b>	over £125,140	45%

Worked example:

Calculate the amount of income tax a person pays if he/she earns £45 400 per year.

Your turn:

Calculate the amount of income tax a person pays if he/she earns £39 500 per year.

Worked example:

Calculate the amount of income tax a person pays if he/she earns £67 400 per year.

Your turn:

Calculate the amount of income tax a person pays if he/she earns £59 300 per year.

# Practice...

Calculate the amount of income tax for the following gross salaries:

- Marketing director: £80 411
- Public relations professionals: £34 168
- Advertising accounts manager and creative director: £42 531
- Information technology and telecommunications director: £69 409
- IT business analysts, architects and system designers: £47 948

The standard personal allowance for 2022–2023 is £12570

Income after allowances	Income tax rate
up to £37 700	20%
over £37 700 and up to £150 000	40%
above £150 000	45%

# Answers...

Calculate the amount of income tax for the following gross salaries:

- Marketing director: £80 411 **£19596.40**
- Public relations professionals: £34 168 **£4319.60**
- Advertising accounts manager and creative director: £42 531 **£5992.20**
- Information technology and telecommunications director: £69 409 **£15195.60**
- IT business analysts, architects and system designers: £47 948 **£7075.60**

The standard personal allowance for 2022–2023 is £12570

Income after allowances	Income tax rate
up to £37 700	20%
over £37 700 and up to £150 000	40%
above £150 000	45%

# National insurance

National Insurance contributions are a tax on earnings and self-employed profits paid by employees, employers and the self-employed. They can help to build your entitlement to certain benefits depending whether you are employed or self-employed, such as the State Pension and Maternity Allowance.

You pay mandatory National Insurance if you're 16 or over and are either:

- an employee earning above £242 a week
- self-employed and making a profit of more than £12,570 a year

Percentage NI due	Minimum monthly income	Maximum monthly income	Minimum yearly income	Maximum yearly income
0%		up to £1048		£12 570
13.25%	£1048	£4189	£12 570	£50 270
3.25%	above £4189		above £50 270	

Worked example:

Calculate the amount of income tax a person pays if he/she earns £45 400 per year.

Your turn:

Calculate the amount of income tax a person pays if he/she earns £39 500 per year.

# Practice...

Calculate the amount of National Insurance for the following gross salaries:

- Marketing director: £80 411
- Public relations professionals: £34 168
- Advertising accounts manager and creative director: £42 531
- Information technology and telecommunications director: £69 409
- IT business analysts, architects and system designers: £47 948

Percentage NI due	Minimum weekly income	Maximum weekly income	Minimum yearly income	Maximum yearly income
0%		£157		£8164
12%	£157.01	£866	£8164.01	£45 032
2%	above £866		above £45 032	

# Answers...

Calculate the amount of National Insurance for the following gross salaries:

- Marketing director: £80 411 **£5131.74**
- Public relations professionals: £34 168 **£3120.48**
- Advertising accounts manager and creative director: £42 531 **£4124.04**
- Information technology and telecommunications director: £69 409 **£4911.70**
- IT business analysts, architects and system designers: £47 948 **£4482.48**

Percentage NI due	Minimum weekly income	Maximum weekly income	Minimum yearly income	Maximum yearly income
0%		£157		£8164
12%	£157.01	£866	£8164.01	£45 032
2%	above £866		above £45 032	

# Plenary...

Use Income Tax and National Insurance 2017–2018 in the Preliminary Material. Vikki is thinking about returning to work after having a baby. Her employer offers her a contract for three days a week with a gross salary of £15 800 per year.

She will have to pay for nursery and travelling costs for each of the three days.

Nursery £32 per day

Travel £7 per day

Vikki will have four weeks' holiday each year.

She will have no nursery or travel costs in these weeks.

She pays income tax and National Insurance but has no other deductions.

She has a personal tax allowance of £11 500

Vikki works out her average monthly net pay after paying the nursery and travel costs.

She says,

"I will still have more than £700 per month left of my net pay."

Is she correct?

You must show your working.

The standard personal allowance for 2017–2018 is £11 500

Rate	Taxable income
Basic: 20%	up to £33 500
Higher: 40%	over £33 500 and up to £150 000
Additional: 45%	over £150 000

Percentage NI due	Minimum weekly income	Maximum weekly income	Minimum yearly income	Maximum yearly income
0%		£157		£8164
12%	£157.01	£866	£8164.01	£45 032
2%	above £866		above £45 032	