

WJEC GCSE MATHS • GRADE 3

MATHS



MODEL ANSWERS

FINANCIAL MATHS (FOUNDATION B)

SCORE

/92

PERCENTAGE

%

STEMUP

- 1 Jess borrows £4,000 for a motorbike.
She repays £90.25 each month for 48 months.
Work out the total amount she repays.

$$48 \times £90.25 = £4,332.00$$

£4,332.00

/ 1

- 2 Sian is a double glazing salesperson.
She earns 3% commission on sales.
In one month she sells goods worth £12,000.
Work out her commission.

$$3\% \text{ of } £12,000 = £360$$

£360

/ 1

- 3 A bureau charges 2% commission to change pounds into euros.
Nia changes £500.
Work out the commission in pounds.

$$2\% \text{ of } £500 = £10$$

£10

/ 1

- 4 Sian borrows £6,000 for a kitchen.
She repays £364.75 each month for 18 months.
Work out the total amount she repays.

$$18 \times £364.75 = £6,565.50$$

£6,565.50

/ 1

- 5 An estate agent charges 1% commission when a house is sold.
Ioan sells his house for £350,000.
Work out the commission the estate agent charges.

$$1\% \text{ of } £350,000 = £3,500$$

£3,500

/ 1

- 6 Osian earns £23,000 in a year.
He pays £2,086 income tax and £1,400 National Insurance.
Work out his income after these are taken away.

$$\begin{aligned} \text{Deductions} &= £2,086 + £1,400 = £3,486 \\ £23,000 - £3,486 &= £19,514 \end{aligned}$$

£19,514

/ 1

- 7 Sam borrows £5,000. Simple interest of 4% a year is charged for 2 years.
Work out the total interest.

$$\begin{aligned} 4\% \text{ of } £5,000 &= £200 \text{ per year} \\ \times 2 &= £400 \end{aligned}$$

£400

/ 1

- 8 Evan buys a house for £275,000.
He pays a deposit of 5% of the price.
The rest of the price is paid with a mortgage. Work out the amount of the mortgage.

$$\begin{aligned} \text{Deposit} &= 5\% \text{ of } £275,000 = £13,750 \\ £275,000 - £13,750 &= £261,250 \end{aligned}$$

£261,250

/ 1

- 9 Sian earns £23,000 in a year.
She pays £2,086 income tax and £2,050 National Insurance.
Work out her income after these are taken away.

$$\begin{aligned} \text{Deductions} &= £2,086 + £2,050 = £4,136 \\ £23,000 - £4,136 &= £18,864 \end{aligned}$$

£18,864

/ 1

- 10 Jess earns £402 a week.
National Insurance (NI) is 12% of weekly earnings above £242.
Work out the NI she pays each week.

$$\begin{aligned}\text{£}402 - \text{£}242 &= \text{£}160 \\ 12\% \text{ of } \text{£}160 &= \text{£}19.20\end{aligned}$$

£19.20

/ 1

- 11 Sam buys a house for £200,000.
He pays a deposit of 5% of the price.
The rest of the price is paid with a mortgage. Work out the amount of the mortgage.

$$\begin{aligned}\text{Deposit} &= 5\% \text{ of } \text{£}200,000 = \text{£}10,000 \\ \text{£}200,000 - \text{£}10,000 &= \text{£}190,000\end{aligned}$$

£190,000

/ 1

- 12 £1 = \$1.27.
Tomos has \$152.40 left after a holiday in New York.
Work out how much this is worth in pounds.

$$152.40 \div 1.27 = 120$$

£120

/ 1

- 13 Sian has a mortgage of £100,000.
She pays £478 each month for 25 years.
Work out the total amount she pays.

$$25 \times 12 = 300 \text{ months}$$
$$300 \times £478 = £143,400$$

£143,400

/ 1

- 14 Sasha earns £462 a week.
National Insurance (NI) is 8% of weekly earnings above £242.
Work out the NI she pays each week.

$$£462 - £242 = £220$$
$$8\% \text{ of } £220 = £17.60$$

£17.60

/ 1

- 15 £1 = €1.18.
Evan has €177.00 left after a holiday in France.
Work out how much this is worth in pounds.

$$177.00 \div 1.18 = 150$$

£150

/ 1

- 16 Megan has a mortgage of £200,000.
She pays £862 each month for 30 years.
Work out the total amount she pays.

$$30 \times 12 = 360 \text{ months}$$

$$360 \times £862 = £310,320$$

£310,320

/ 1

- 17 Nia earns £460 a week.
National Insurance (NI) is 8% of weekly earnings above £240.
Work out the NI she pays each week.

$$£460 - £240 = £220$$

$$8\% \text{ of } £220 = £17.60$$

£17.60

/ 1

- 18 £1 = A\$1.90.
Sian has A\$76.00 left after a holiday in Australia.
Work out how much this is worth in pounds.

$$76.00 \div 1.90 = 40$$

£40

/ 1

- 19 Sam earns £24,500 in a year.
The first £12,000 of income each year is tax-free (the personal allowance).
The rest of the income is taxed at 20%.
Work out how much income tax he pays in the year.

$$\begin{aligned}\text{Taxable income} &= £24,500 - £12,000 = \\ &£12,500 \\ \text{tax} &= 20\% \text{ of } £12,500 = £2,500\end{aligned}$$

£2,500

1 / 1

- 20 Iolo buys a house for £220,000.
He pays a deposit of 10% of the price.
The rest of the price is paid with a mortgage. Work out the amount of the mortgage.

$$\begin{aligned}\text{Deposit} &= 10\% \text{ of } £220,000 = £22,000 \\ £220,000 - £22,000 &= £198,000\end{aligned}$$

£198,000

1 / 1

- 21 £1 = €1.15.
Liam has €287.50 left after a holiday in Spain.
Work out how much this is worth in pounds.

$$287.50 \div 1.15 = 250$$

£250

2 / 2

- 22 Gwen earns £22,750 in a year.
The first £12,000 of income each year is tax-free (the personal allowance).
The rest of the income is taxed at 20%.
Work out how much income tax she pays in the year.

$$\begin{aligned}\text{Taxable income} &= £22,750 - £12,000 = \\ &£10,750 \\ \text{tax} &= 20\% \text{ of } £10,750 = £2,150\end{aligned}$$

£2,150

2 / 2

- 23 Leah is a sales assistant.
She is paid a basic salary of £1,500 a month plus 8% commission on sales.
In one month she sells goods worth £4,200.
Work out her total pay for the month.

$$\begin{aligned}\text{Commission} &= 8\% \text{ of } £4,200 = £336 \\ \text{total} &= £1,500 + £336 = £1,836\end{aligned}$$

£1,836

2 / 2

- 24 An estate agent charges 2.5% commission when a house is sold.
Tomos sells his house for £350,000.
Work out how much money Tomos gets after the commission is paid.

$$\begin{aligned}\text{Commission} &= £8,750 \\ £350,000 - £8,750 &= £341,250\end{aligned}$$

£341,250

2 / 2

- 25 Liam buys a sofa. The cash price is £520.
He can pay a deposit of £40 and then £24.15 a month for 24 months.
Work out the total cost when paying by instalments.

$$24 \times £24.15 = £579.60$$
$$\text{plus deposit } £40 = £619.60$$

£619.60

2 / 2

- 26 Liam earns £23,970 a year. The personal allowance is £12,570.
Income above the personal allowance is taxed at 20%.
Work out his income after tax, for the year.

$$\text{Tax} = 20\% \text{ of } £11,400 = £2,280$$
$$£23,970 - £2,280 = £21,690$$

£21,690

2 / 2

- 27 Leah is an estate agent.
She earns 3% commission on sales.
One month she earns £360 commission.
Work out the value of her sales that month.

$$£360 \div 3 \times 100 = £12,000$$

£12,000

2 / 2

- 28 Nerys buys a TV. The cash price is £720.
She can pay a deposit of £40 and then £39.78 a month for 18 months.
Work out the total cost when paying by instalments.

$$18 \times £39.78 = £716.04$$

$$\text{plus deposit } £40 = £756.04$$

£756.04

2 / 2

- 29 Iolo earns £20,070 a year. The personal allowance is £12,570.
Income above the personal allowance is taxed at 20%.
Work out his income after tax, for the year.

$$\text{Tax} = 20\% \text{ of } £7,500 = £1,500$$

$$£20,070 - £1,500 = £18,570$$

£18,570

2 / 2

- 30 £1 = \$1.27.
A bureau charges a fee of £6 to change money.
Sasha changes £400. The fee is taken from the amount in pounds first.
How many US dollars does she get?

$$£400 - £6 = £394$$

$$\times 1.27 = 500.38$$

\$500.38

2 / 2

- 31 Callum buys a washing machine. The cash price is £400.
He can pay a deposit of £50 and then £30.75 a month for 12 months.
How much more does he pay by instalments than by paying the cash price?

$$\text{Instalments: } 12 \times £30.75 + £50 = £419.00$$
$$£419.00 - £400 = £19.00$$

£19.00

2 / 2

- 32 Nia earns £27,270 a year. The personal allowance is £12,570.
Income above the personal allowance is taxed at 20%.
Work out how much income tax she pays each month.

$$\text{Tax for the year} = 20\% \text{ of } £14,700 = £2,940$$
$$£2,940 \div 12 = £245$$

£245

2 / 2

- 33 Nerys has a mortgage of £150,000.
She pays £892 each month for 20 years.
Work out how much more than the mortgage she pays.

$$\text{Total} = 240 \times £892 = £214,080$$
$$£214,080 - £150,000 = £64,080$$

£64,080

2 / 2

- 34 Cerys buys a TV. The cash price is £720.
She can pay a deposit of £50 and then £29.72 a month for 24 months.
How much more does she pay by instalments than by paying the cash price?

$$\text{Instalments: } 24 \times £29.72 + £50 = £763.28$$
$$£763.28 - £720 = £43.28$$

£43.28

2 / 2

- 35 Owen earns £34,070 a year and pays £4,300 income tax.
Work out the tax he pays as a percentage of his income.
Give your answer correct to 1 decimal place.

$$£4,300 \div £34,070 \times 100 = 12.6\%$$

12.6%

2 / 2

- 36 Carys borrows £2,000 for 36 months. There are two loans to choose from.
Loan A: monthly payment £59.77, no fee.
Loan B: monthly payment £56.77, plus a fee of £200 paid at the start.
Which loan costs less in total, and by how much?
You must show your working.

$$A: 36 \times £59.77 = £2,151.72$$
$$B: 36 \times £56.77 = £2,043.72, \text{ plus } £200 =$$
$$£2,243.72$$

Loan A is cheaper by £92

2 / 2

- 37 Callum pays £3,900 income tax in a year.
Income tax is charged at 20% on income above the personal allowance.
The personal allowance is £12,570.
Work out his total income for the year.

$$\begin{aligned}\text{Taxed income} &= £3,900 \div 20 \times 100 = £19,500 \\ \text{total} &= £19,500 + £12,570 = £32,070\end{aligned}$$

£32,070

2 / 2

- 38 Amira earns £24,070 a year and pays £2,300 income tax.
Work out the tax she pays as a percentage of her income.
Give your answer correct to 1 decimal place.

$$£2,300 \div £24,070 \times 100 = 9.6\%$$

9.6%

2 / 2

- 39 A bank lends up to 5 times a person's yearly income for a mortgage.
Sasha earns £36,000 a year.
She wants to buy a house for £140,000 with a deposit of 20%.
Can she borrow enough? Show how you decide.

$$\begin{aligned}\text{Most the bank lends} &= 5 \times £36,000 = \\ &£180,000 \\ \text{mortgage needed} &= £140,000 - 20\% \text{ deposit} = \\ &£112,000\end{aligned}$$

Yes: the bank lends up to
£180,000 and she needs £112,000

3 / 3

- 40 Nerys borrows £3,000 for 24 months. There are two loans to choose from.

Loan A: monthly payment £144.75, no fee.

Loan B: monthly payment £139.75, plus a fee of £150 paid at the start.

Which loan costs less in total, and by how much?

You must show your working.

$$A: 24 \times £144.75 = £3,474.00$$

$$B: 24 \times £139.75 = £3,354.00, \text{ plus } £150 = \\ £3,504.00$$

Loan A is cheaper by £30

3 / 3

- 41 Dafydd pays £3,600 income tax in a year.

Income tax is charged at 20% on income above the personal allowance.

The personal allowance is £12,570.

Work out his total income for the year.

$$\text{Taxed income} = £3,600 \div 20 \times 100 = £18,000$$

$$\text{total} = £18,000 + £12,570 = £30,570$$

£30,570

3 / 3

- 42 A bank lends up to 4.5 times a person's yearly income for a mortgage.

Gareth earns £45,000 a year.

He wants to buy a house for £120,000 with a deposit of 20%.

Can he borrow enough? Show how you decide.

$$\text{Most the bank lends} = 4.5 \times £45,000 = \\ £202,500$$

$$\text{mortgage needed} = £120,000 - 20\% \text{ deposit} = \\ £96,000$$

*Yes: the bank lends up to
£202,500 and he needs £96,000*

3 / 3

- 43 Two bureaux change £500 into Australian dollars.

Bureau A: £1 = A\$1.90, with no fee.

Bureau B: £1 = A\$1.94, with a fee of £3.

Which bureau gives more Australian dollars? Show your working.

$$A: (£500 - £0) \times 1.90 = A\$950.00$$

$$B: (£500 - £3) \times 1.94 = A\$964.18$$

Bureau B gives more (A\$964.18 compared with A\$950.00)

3 / 3

- 44 Sam earns £68,270 in a year.

The first £12,570 is tax-free.

The next £37,700 is taxed at 20%.

Any income above £50,270 is taxed at 40%.

Work out the total income tax he pays.

You must show your working.

$$20\% \text{ of } £37,700 = £7,540$$

$$\text{income above } £50,270 = £18,000$$

$$40\% \text{ of } £18,000 = £7,200$$

$$\text{total} = £14,740$$

£14,740

3 / 3

- 45 A bank lends up to 4.5 times a person's yearly income for a mortgage.

Ceri earns £45,000 a year.

She wants to buy a house for £140,000 with a deposit of 20%.

Can she borrow enough? Show how you decide.

$$\text{Most the bank lends} = 4.5 \times £45,000 = £202,500$$

$$\text{mortgage needed} = £140,000 - 20\% \text{ deposit} = £112,000$$

Yes; the bank lends up to £202,500 and she needs £112,000

3 / 3

- 46 Two bureaux change £500 into euros.
 Bureau A: £1 = €1.18, with a fee of £5.
 Bureau B: £1 = €1.20, with a fee of £4.
 Which bureau gives more euros? Show your working.

$$A: (£500 - £5) \times 1.18 = €584.10$$

$$B: (£500 - £4) \times 1.20 = €595.20$$

Bureau B gives more (€595.20
 compared with €584.10)

3 / 3

- 47 Sam earns £62,270 in a year.
 The first £12,570 is tax-free.
 The next £37,700 is taxed at 20%.
 Any income above £50,270 is taxed at 40%.
 Work out the total income tax he pays.
 You must show your working.

$$20\% \text{ of } £37,700 = £7,540$$

$$\text{income above } £50,270 = £12,000$$

$$40\% \text{ of } £12,000 = £4,800$$

$$\text{total} = £12,340$$

£12,340

3 / 3

- 48 Osian borrows £3,000. Simple interest of 4% a year is charged for 3 years.
 He repays the loan and interest in equal monthly payments over the 3 years.
 Work out the monthly payment.

$$\text{Interest} = £360$$

$$\text{total} = £3,360$$

$$36 \text{ months}$$

$$£3,360 \div 36 = £93.33$$

£93.33

3 / 3

- 49 A bike costs £720 in cash. It can also be bought on one of two payment plans.

Plan A: 25% deposit, then £56.33 a month for 10 months.

Plan B: 25% deposit, then £31.16 a month for 20 months.

Which of the two plans costs less in total, and by how much?

You must show your working.

$$\text{Deposit} = 25\% \text{ of } £720 = £180$$

$$\text{A: } £180 + 10 \times £56.33 = £743.30$$

$$\text{B: } £180 + 20 \times £31.16 = £803.20$$

Plan A is cheaper by £59.90

3 / 3

- 50 A bike costs £300 in cash. It can also be bought on one of two payment plans.

Plan A: 10% deposit, then £45.90 a month for 6 months.

Plan B: 10% deposit, then £27.30 a month for 12 months.

Which of the two plans costs less in total, and by how much?

You must show your working.

$$\text{Deposit} = 10\% \text{ of } £300 = £30$$

$$\text{A: } £30 + 6 \times £45.90 = £305.40$$

$$\text{B: } £30 + 12 \times £27.30 = £357.60$$

Plan A is cheaper by £52.20

3 / 3