



Numeracy Calculator

Revision Pack



41 minutes



42 marks

To use alongside mymaths.co.uk and livemaths.co.uk to revise for your GCSE exam

Q1. (a) Express 252 as a product of its prime factors.

.....

(3)

James thinks of two numbers.

He says "The Highest Common Factor (HCF) of my two numbers is 3
The Lowest Common Multiple (LCM) of my two numbers is 45"

(b) Write down two numbers that James could be thinking of.

..... and

(3)

(Total 6 marks)

Q2.



Eiffel Tower

The table shows the cost of two different models of the Eiffel Tower.

| | |
|-------|-------|
| Small | £2.40 |
| Large | £4.50 |

Pierre buys 10 Small models, and 5 Large models.

He pays with a £50 note.

(a) Work out how much change he should get.

£

(3)

A different model of the Eiffel Tower is made to a scale of 2 millimetres to 1 metre.

The width of the base of the real Eiffel Tower is 125 metres.

- (b) Work out the width of the base of the model.
Give your answer in millimetres.

..... mm

(2)

The height_ of the model is 648 millimetres.

- (c) Work out the height_ of the real Eiffel Tower.
Give your answer in metres.

..... m

(2)
(Total 7 marks)

Q3. Jack invests £3000 for 2 years at 4% per annum compound interest.

Work out the value of the investment at the end of 2 years.

£

(Total 3 marks)

Q4. The cost of a radio is the list price plus VAT at $17\frac{1}{2}\%$.

The list price of a radio is £240

Work out the cost of the radio.

£

(Total 3 marks)

Q5. Use a calculator to work out

$$\sqrt{\frac{21.6 \times 15.8}{3.8}}$$

(a) Write down all the figures on your calculator display.

.....

(2)

(b) Give your answer to part (a) correct to 3 significant figures.

.....

(1)
(Total 3 marks)

Q6. The weight of a bag of potatoes is 25 kg, correct to the nearest kg.

(a) Write down the smallest possible weight of the bag of potatoes.

..... kg

(1)

(b) Write down the largest possible weight of the bag of potatoes.

..... kg

(1)

(Total 2 marks)

Q7. Here are the ingredients for making cheese pie for 6 people.

Cheese pie for 6 people

180 g flour

240 g cheese

80 g butter

4 eggs

160 ml milk

Bill makes a cheese pie for 3 people.

(a) Work out how much flour he needs.

..... g

(2)

Jenny makes a cheese pie for 15 people.

(b) Work out how much milk she needs.

..... ml

(2)

(Total 4 marks)

Q8. There are some sweets in a bag.

18 of the sweets are toffees.

12 of the sweets are mints.

- (a) Write down the ratio of the number of toffees to the number of mints.
Give your ratio in its simplest form.

..... :

(2)

There are some oranges and apples in a box.

The total number of oranges and apples is 54.

The ratio of the number of oranges to the number of apples is 1 : 5.

- (b) Work out the number of apples in the box.

.....

(2)

(Total 4 marks)

Q9. Tania went to Italy.

She changed £325 into euros (€).

The exchange rate was £1 = €1.68

- (a) Change £325 into euros (€).

€

(2)

When she came home she changed €117 into pounds.

The new exchange rate was £1 = €1.50

(b) Change €117 into pounds.

£

(2)
(Total 4 marks)

Q10. Imran wants to work out how much tax he needs to pay.

Last year he earned £18 000

He does not pay Income tax on the first £6475 he earned.

He pays tax of 20 pence for each pound he earned above £6475

He pays the tax in two equal half-yearly instalments.

(a) How much Income tax does Imran have to pay in his first half-yearly instalment?

.....

(4)

Imran wants to know what percentage of his earnings he pays in tax.

(b) Calculate the Income tax Imran has to pay as a percentage of his earnings last year.

..... %

(2)
(Total 6 marks)

M1.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|--|---|------|--|
| (a) | 2)252 2)126 3) 63 or factor trees 3) 21 7) 7 1 | $2 \times 2 \times 3 \times 3 \times 7$ | 3 | M1 for attempt at continual prime factorisation (at least 2 correct steps); could be shown as a factor tree OR sight of at least one each of 2, 3, 7 as factors of 252 A1 for a fully correct factor tree or 2, 2, 3, 3, 7 which may include 1, but no other numbers A1 $2 \times 2 \times 3 \times 3 \times 7$ or $2^2 \times 3^2 \times 7$ oe |
| (b) | HCF: The numbers must be $3n$ and $3m$ where n and m are coprime and at most one is a multiple of 3 LCM: Factors of 45 are 1, 3, 5, 9, 15, 45 | 9 and 15 or 3, 45 | 3 | B3 cao (B2 for 2 numbers with HCF of 9 or LCM of 15) (B1 for any attempt to list any 4 factors of 45 or any 4 multiples of 3). |
| Total for Question: 6 marks | | | | |

M2.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|--|--------|------|--|
| (a) | $(2.40 \times 10) + (4.50 \times 5)$ $= 24.00 + 22.50 = 46.50$ $50.00 - 46.50$ | 3.50 | 3 | M1 (2.40×10) or (4.50×5) or sight of 24 or 22.5(0) M1 $(2.40 \times 10) + (4.50 \times 5)$ or sight of 24 + 22.5(0) or sight of 46.5(0) A1 cao Accept 3.5 |
| (b) | 125×2 | 250 | 2 | M1 125×2 A1 cao |
| (c) | $648 \div 2$ | 324 | 2 | M1 $648 \div 2$ A1 cao |
| Total for Question: 7 marks | | | | |

M3.

| Working | Answer | Mark | Additional Guidance |
|--|---------|------|---|
| $3000 \times \frac{4}{100} + 3000 = 3120$ $3120 \times \frac{4}{100} + 3120 = 3244.80$ or $3000 \times \left(\frac{104}{100}\right)^2$ | 3244.80 | 3 | <p>M1 for $3000 \times \frac{4}{100}$ or 120 or 240 or 3240 or 3120 or 1.04×3000 or 2880 or 2760</p> <p>M1(dep) for $(3000+'120') \times \frac{4}{100}$ or 124.8(0) or "3120"\times1.04 A1 £3244.8(0) OR</p> <p>M2 $3000 \times \left(\frac{104}{100}\right)^2$ or $3000 \times \left(\frac{104}{100}\right)^3$ A1 £3244.8(0) NB : If correct answer seen then ignore subsequent years</p> |
| Total for Question: 3 marks | | | |

M4.

| Working | Answer | Mark | Additional Guidance |
|--|--------|------|---|
| $240 \times \frac{117.5}{100}$ or $240 + 24 + 12 + 6$ | £282 | 3 | <p>B1 for 117.5 or 1.175</p> <p>M1 for $240 \times \frac{117.5}{100}$ oe A1 cao OR</p> <p>M1 for $240 \times \frac{17.5}{100}$ OR 24 + 12 + 6 oe OR 42 M1(dep) for 240 + "42" OR 240 + 24 + 12 + 6 A1 cao</p> |
| Total for Question: 3 marks | | | |

M5.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|---|-------------|------|--|
| (a) | $\sqrt{\frac{21.6 \times 15.8}{3.8}} =$ | 9.476841579 | 2 | M1 for 89.81052 or 341.28 or 4.86151... $\frac{8532}{95}$ or $\frac{8532}{25}$ A1 for 9.47684..... SC: B1 for 9.476841579... truncated or rounded to at least 1 decimal place |
| (b) | $\sqrt{89.81052632}$ | 9.48 | 1 | B1 ft from (a) with at least 4 significant figures |
| Total for Question: 6 marks | | | | |

M6.

| | Answer | Mark | Additional Guidance |
|------------------------------------|--------|------|-----------------------------|
| (a) | 24.5 | 1 | B1 cao |
| (b) | 25.5 | 1 | B1 for 25.5 or 25.4ḡ |
| Total for Question: 2 marks | | | |

M7.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|------------------|--------|------|--|
| (a) | $180 \div 2$ | 90 | 2 | M1 for $180 \div 2$ OR $180 \div 6 \times 3$ A1 cao |
| (b) | 160×2.5 | 400 | 2 | M1 for 160×2.5 OR $160 \div 6 \times 15$ OR $160 \div 2 \times 5$ oe A1 cao SC: B1 for an answer of 399 to 405 |
| Total for Question: 4 marks | | | | |

M8.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|--|--------|------|--|
| (a) | $18 \div 6 : 12 \div 6$ | 3 : 2 | 2 | M1 for 18 : 12 or 12 : 18 or 1.5:1 or 1:0.67 oe or correct ratio reversed eg 2:3 A1 for 3 : 2 or 1 : 0.6 ... [recurring] |
| (b) | $5 + 1 = 6$ $54 \div 6 = 9$ 5×9 | 45 | 2 | M1 for $\frac{5}{5+1} \times 54$ or $\frac{1}{5+1} \times 54$ or $54 \div '5 + 1'$ or 54×5 or 270 or 9 : 45 or 9 seen, as long as it is not associated with incorrect working. A1 for 45 cao |
| Total for Question: 4 marks | | | | |

M9.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|-------------------|--------|------|---|
| (a) | 325×1.68 | 546 | 2 | M1 for 325×1.68 seen or digits 546 A1 for 546, accept 546.00, 546.0 |
| (b) | $117 \div 1.5$ | 78 | 2 | M1 for $117 \div 1.5$ seen or digits 78 A1 for 78, accept 78.00, 78.0 |
| Total for Question: 4 marks | | | | |

M10.

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|--|---------------|-------------|--|
| (a) | $18000 - 6475 = 11525$ $11525 \times \frac{20}{100} = 2305$ | £1152.50 | 4 | M1 $18000 - 6475$ A1 11525 M1 $'11525' \times \frac{20}{100}$ A1 £1152.50 |
| (b) | $\frac{'2305'}{18000} \times 100$ | 12.8 | 2 | M1 $\frac{'2305'}{18000} \times 100$ A1 ft on '2305' |
| Total for Question: 6 marks | | | | |

