# Name: SOLUTIONS

| GCSE (1 - 9)<br><br>Four Operations | Solutions: |
|---|---|

These questions represent all of the times that this topic has appeared in unlocked Pearson Edexcel GCSE maths papers as of July 2023. More questions can be found at examq.co.uk

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**1**

£42 is shared equally between 3 friends.

How much does each friend get?

42 ÷ 3 = 14

£.....

**(Total for Question 7 is 2 marks)**

*[Edexcel, GCSE, Autumn 2021, Paper 1F, Q7]*

**2**

Danny buys,

1 loaf of bread for £1.20
1 bottle of milk for 70p
2 packets of cheese for £2.30 each packet

2 × 2.30 = 4.60

Danny pays with a £10 note.

He says,

"I should get £3.30 change."

Is Danny correct?
You must show how you get your answer.

10 - 6.50 = £3.50

1.20
0.70
+ 4.60
6.50

No. He gets £3.50 change

**(Total for Question 9 is 3 marks)**

*[Edexcel, GCSE, Autumn 2021, Paper 1F, Q9]*

**3**

3 kg of carrots cost £1.80

2 kg of carrots and 5 kg of potatoes cost a total of £3.45

Work out the total cost of 4 kg of carrots and 2 kg of potatoes.
You must show all your working.

Carrots

3 kg = £1·80

1 kg = £0·60

2 kg = £1·20

4 kg = £2·40

2kg carrots + 5kg potatoes = £3·45

£1·20 + 5kg = £3·45

5kg = £2·25

1kg = £0·45

2kg = £0·90

£2·40 + £0·90 = £ 3·30

**(Total for Question 14 is 4 marks)**

*[Edexcel, GCSE, Autumn 2021, Paper 1F, Q14]*

**4**

A baker has three bags of flour, **A**, **B** and **C**.

Bag **A** and bag **B** contain the same amount of flour.
Bag **C** contains 940 g of flour.

In the three bags, there is a total of 2500 g of flour.

Work out the amount of flour in bag **A**.

Bag A: $x$ + Bag B: $x$ + Bag C: $940$ = Total: $2500$

$$2x + 940 = 2500$$

$$2x = 1560$$

$$x = 780$$

780 ..... g

**(Total for Question 7 is 3 marks)**

*[Edexcel, GCSE, Autumn 2021, Paper 2F, Q7]*

**5**

Rachel, Samina and Tom share £600 between them.

Rachel gets $\frac{2}{5}$ of the £600

Samina gets $\frac{1}{4}$ of the money that is left over.

Tom gets the rest of the money.

Tom says,

"I would have got more money if we had shared the £600 equally between us."

Is Tom correct?
You must show how you get your answer.

Rachel : $\frac{2}{5}$ of 600 = $600 \div 5 = 120$, $120 \times 2 = 240$

Left over = $600 - 240 = 360$

Samina : $\frac{1}{4}$ of 360 = $360 \div 4 = 90$

Tom = $360 - 90 = £270$

£600 shared equally: $600 \div 3 = £200$.

Tom is wrong.

$270 > 200$

**(Total for Question 19 is 4 marks)**

*[Edexcel, GCSE, Autumn 2021, Paper 2F, Q19]*

**6**

On Monday, Sandy pays for 2 plane tickets, 7 nights in a hotel and 2 theme park tickets.

| | dollars |
|---|---|
| each plane ticket | 600 |
| each night in a hotel | 120 |
| each theme park ticket | 250 |

Show that Sandy pays more than 2500 dollars on Monday.

2 plane tickets = 600 x 2 = 1200

7 nights in hotel = 120 x 7 = 840

2 theme parks = 250 x 2 = 500

1200 + 840 + 500 =

**(Total for Question 8 is 3 marks)**

*[Edexcel, GCSE, Autumn 2021, Paper 3F, Q8]*

**7**

Corina has £300 to spend on books.
Each book costs £4.85

Work out the greatest number of books Corina can buy.

$300 \div 4.85 = 61.855...$

61

**(Total for Question 10 is 3 marks)**

*[Edexcel, GCSE, Autumn 2021, Paper 3F, Q10]*

**8**

Jenny has 12 marbles.

$\frac{1}{4}$ of these 12 marbles are large.

The rest of these 12 marbles are small.

Each large marble has a weight of 70 grams.
Each small marble has a weight of 50 grams.

Work out the total weight of the 12 marbles.

Large: 1/4 of 12 = 3

Small: 12 − 3 = 9

Weight: 3 × 70 + 9 × 50

: 210 + 450 = 660

660 grams

**(Total for Question 10 is 4 marks)**

*[Edexcel, GCSE, Autumn 2020, Paper 1F, Q10]*

**9**

A machine fills bags with sweets.

There are 4275 sweets.
There are 28 sweets in each full bag.

The machine fills as many bags as possible.

How many sweets are left?

$4275 \div 28 = 152.67$

152 bags = $152 \times 28 = 4256$

$4275 - 4256 = 19$

19

**(Total for Question 13 is 3 marks)**

*[Edexcel, GCSE, Autumn 2020, Paper 2F, Q13]*

**10**

Karim buys 200 tiles.

The tiles are sold in boxes.
There are 25 tiles in each box.
Each box of tiles costs £9.75

Work out the total cost of the boxes of tiles Karim buys.

200 ÷ 25 = 8

8 x 9.75 = £78

£ 78

**(Total for Question 8 is 3 marks)**

*[Edexcel, GCSE, Autumn 2020, Paper 3F, Q8]*

**11**

Rehan is on holiday in the USA.

He has $200 to spend on clothes.

Rehan buys

1 pair of trainers costing $60
3 T-shirts costing $25 each.

He also wants to buy a jacket costing $80

(a) Has Rehan got enough money to buy the jacket?
You must show how you get your answer.

$60 + 3 \times 25 = \$135$

$200 - 135 = \$65$

No.

$65 < 80$

(3)

The trainers cost $60
The exchange rate is $1 = £0.749

Rehan says,

"The trainers cost less than £40"

Rehan is wrong.

(b) Using a suitable approximation, show working to explain why.

$60 \times 0.75 = 45$

$60 \times 0.7 = 42$

(2)

**(Total for Question 12 is 5 marks)**

*[Edexcel, GCSE, Autumn 2019, Paper 1F, Q12]*

**12**

Work out $23 \times 15$

| × | 20 | 3 |
|---|---|---|
| 10 | 200 | 30 |
| 5 | 100 | 15 |

200
100
30
+ 15
345

345

**(Total for Question 14 is 2 marks)**

*[Edexcel, GCSE, Autumn 2019, Paper 1F, Q14]*

**13**

There are 14 rows of seats in a cinema.
There are 15 seats in each row.

14 x 15 = 210 seats

A film was shown in the cinema on Saturday.
Each ticket for the film cost £6.50

The tickets that were sold cost a total of £1274

1274 ÷ 6·5 = 196 sold

How many tickets were **not** sold?

210 - 196 = 14

14

**(Total for Question 6 is 3 marks)**

*[Edexcel, GCSE, Autumn 2019, Paper 2F, Q6]*

**14**

Dylan buys 13 bicycle lights for £7.50 each.
He pays with five £20 notes.

(a) How much change should Dylan get?

$13 \times 7.50 = £97.50$

$5 \times 20 = £100$

$100 - 97.50 = 2.50$

£ 2.50

(3)

The normal price of a bicycle is £120

In a sale, there is $\frac{1}{5}$ off the normal price of the bicycle.

(b) Work out the price of the bicycle in the sale.

$120 \times \frac{1}{5} = 24$

$120 - 24 = 96$

£ 96

(2)

**(Total for Question 11 is 5 marks)**

*[Edexcel, GCSE, Autumn 2019, Paper 3F, Q11]*

**15**

Cornflakes are sold in two sizes of box.

| Size of box | Weight of cornflakes |
|---|---|
| small | 450 g |
| large | 750 g |

Rae buys 3 small boxes of cornflakes and some large boxes of cornflakes.
In total she buys 5850 g of cornflakes.

Work out the number of large boxes of cornflakes Rae buys.

SMALL: $3 \times 450 = 1350g$

LARGE: $5850 - 1350 = 4500$

$4500 \div 750 = 6$

6

**(Total for Question 12 is 3 marks)**

*[Edexcel, GCSE, Autumn 2019, Paper 3F, Q12]*

**16**

Work out $10 \times (3 + 5)$

$10 \times 8 = 80$

80

**(Total for Question 3 is 1 mark)**

*[Edexcel, GCSE, Summer 2019, Paper 1F, Q3]*

**17**

Harry is planning a holiday for 4 people for 7 days.

Here are the costs for the holiday for **each person**.

| | |
|---|---|
| Travel | £150 |
| Hotel | £50 for each day |
| Spending money | £250 |

Work out the total cost of the holiday for 4 people for 7 days.

One person = $150 + (50 \times 7) + 250 = 750$

Four people = $750 \times 4 = 3000$

£ 3000

**(Total for Question 6 is 4 marks)**

*[Edexcel, GCSE, Summer 2019, Paper 1F, Q6]*

**18**

Work out $74 \times 58$

| × | 70 | 4 |
|---|---|---|
| 50 | 3500 | 200 |
| 8 | 560 | 32 |

3500
560
200
+ 32
4292

**(Total for Question 11 is 2 marks)**

*[Edexcel, GCSE, Summer 2019, Paper 1F, Q11]*

**19**

Dave goes into a cafe and buys 2 cups of coffee and a piece of cake.

Each cup of coffee costs £2.75
The cake costs £2.90

Dave pays with a £10 note.

He thinks he will get more than £1.50 in change.

Is Dave correct?
You must show how you get your answer.

$2 \times 2.75 + 2.90 = £8.40$

$10 - 8.40 = £1.60$

Yes he is correct.

$£1.60 > £1.50$

**(Total for Question 6 is 3 marks)**

*[Edexcel, GCSE, Summer 2019, Paper 2F, Q6]*

**20**

The table shows the costs of sending a parcel by the Express service and by the Rapid service.

| Type of service | Cost |
|---|---|
| Express | £15.25 |
| Rapid | £35.38 |

Brendan has to send 12 parcels.
It will be cheaper to send the parcels by the Express service than by the Rapid service.

(a) How much cheaper?

Express = 12 x 15·25 = £183

Rapid = 12 x 35·38 = £424·56

424·56 − 183 = £ 241·56

(3)

Luke wants to send 21 parcels by the Express service.

He does the calculation $20 \times £15 = £300$ to estimate the cost.

(b) Explain why Luke's calculation shows the actual cost will be more than £300

He rounded down both the amount of parcels and the cost per parcel.
So the actual cost will be more.

(1)

**(Total for Question 11 is 4 marks)**

*[Edexcel, GCSE, Summer 2019, Paper 3F, Q11]*

**21**

(a) Work out $3 \times 5 + 7$

$15 + 7 = 22$

.....

(1)

(b) Work out $2^3$

$2 \times 2 \times 2 = 8$

.....

(1)

(c) Write brackets ( ) in this statement to make it correct.

$7 \times (2 + 3) = 35$

(1)

**(Total for Question 5 is 3 marks)**

*[Edexcel, GCSE, Autumn 2018, Paper 1F, Q5]*

**22**

2 pens cost £2.38
5 folders cost £5.60

Ben wants to buy 20 pens and 20 folders.
He only has £50

Does Ben have enough money to buy 20 pens and 20 folders?
You must show how you get your answer.

Pens

2 = £2.38

x10 ↓ x10 ↓

20 = £23.80

Folders

5 = £5.60

x4 ↓ x4 ↓

20 = £22.40

23.80 + 22.40 = £46.20

Yes Ben does.

£46.20 < £50.00

**(Total for Question 8 is 4 marks)**

*[Edexcel, GCSE, Autumn 2018, Paper 3F, Q8]*

**23**

Tim and three friends go on holiday together for a week.

The 4 friends will share the costs of the holiday equally.

Here are the costs of the holiday.

£1280 for 4 return plane tickets
£640 for the villa
£220 for hire of a car for the week

Work out how much Tim has to pay for his share of the costs.

1280 + 640 + 220 = £2140

2140 ÷ 4 = £535

£ 535

**(Total for Question 10 is 3 marks)**

*[Edexcel, GCSE, Summer 2018, Paper 1F, Q10]*

**24**

Work out $2 + 7 \times 10$

2 + 70 = 72

**(Total for Question 2 is 1 mark)**

*[Edexcel, GCSE, Autumn 2017, Paper 1F, Q13]*

**25**

Jacqui wants to work out $3480 \div 5$

She knows that $3480 \div 10 = 348$

Jacqui writes $3480 \div 5 = 174$

because $10 \div 5 = 2$

and $348 \div 2 = 174$

What mistake did Jacqui make in her method?

She should have doubled 348.
Not divided by 2.

The answer is 696

**(Total for Question 9 is 1 mark)**

*[Edexcel, GCSE, Autumn 2017, Paper 1F, Q21]*

**26**

David has twice as many cousins as Becky.
Becky has twice as many cousins as Nishat.

Nishat has 6 cousins.

How many cousins does David have?

Nishat = 6 cousins

Becky = 6 x 2 = 12 cousins

David = 12 x 2 = 24 cousins

24

**(Total for Question 7 is 2 marks)**

*[Edexcel, GCSE, Autumn 2017, Paper 3F, Q7]*

**27**

Bronwin works in a restaurant.

The table gives her rates of pay.

| Day | Rate of pay |
|---|---|
| Monday to Friday | £8.40 per hour |
| Weekend | £11.20 per hour |

Bronwin worked for a total of 20 hours last week.
She worked 8 of these 20 hours at the weekend.

Show that Bronwin was paid less than £200 last week.

$20 - 8 = 12$

$12 \times 8.40 = £100.80$

$8 \times 11.20 = £89.60$

$100.80 + 89.60 = £190.40$

$190.40 < 200$

**(Total for Question 10 is 3 marks)**

*[Edexcel, GCSE, Autumn 2017, Paper 3F, Q10]*

**28**

Jenny is asked to find the value of $12 - 2 \times 4$

Here is her working.

$$12 - 2 \times 4 = 10 \times 4 = 40$$

Jenny's answer is wrong.

(a) Explain what Jenny has done wrong.

She should multiply the 2 and 4 first and then subtract this from 12.

$12 - 2 \times 4 = 12 - 8 = 4$

(1)

Rehan is asked to find the range of the numbers 3 1 8 7 5

Here is his working.

$$\text{Range} = 5 - 3 = 2$$

This is wrong.

(b) Explain why.

The range is the difference between the largest and smallest numbers

$\text{Range} = 8 - 1 = 7$

(1)

**(Total for Question 15 is 2 marks)**

*[Edexcel, GCSE, Autumn 2017, Paper 3F, Q15]*

**29**

Work out $2 + 7 \times 10$

$2 + 7 \times 10$

$2 + 70 = 72$

72

**(Total for Question 2 is 1 mark)**

*[Edexcel, GCSE, Autumn 2017, Paper 1F, Q2]*

**30**

Jacqui wants to work out $3480 \div 5$

She knows that $3480 \div 10 = 348$

Jacqui writes $3480 \div 5 = 174$

because $10 \div 5 = 2$

and $348 \div 2 = 174$

What mistake did Jacqui make in her method?

For this to work after dividing by 10 you then need to multiply that answer by 2.
Jacqui has actually divided by 20.

**(Total for Question 9 is 1 mark)**

*[Edexcel, GCSE, Autumn 2017, Paper 1F, Q9]*

**31**

Ken buys some fruit.

He buys apples, bananas, peaches and oranges.
Ken buys

| | | |
|---|---|---|
| 4 apples | weighing 125 g each | 4 x 125 = 500 |
| 2 bananas | weighing 170 g each | 2 x 170 = 340 |
| 3 peaches | weighing 135 g each | 3 x 135 = 405 |
| | | 1245g |

Each orange has a weight of 90 g.

The fruit has a total weight of 1.785 kg. = 1785g

(a) Work out how many oranges Ken buys.

1785 − 1245 = 540

540 ÷ 90 = 6 oranges

6

(3)

Jane wants to buy 15 tomatoes.
She asks for 1 kg of tomatoes at a shop.
Jane assumes that each tomato has a weight of 75 g.

(b) (i) If Jane's assumption is correct, will she get 15 tomatoes?
You must show how you get your answer.

15 x 75 = 1125g = 1.125kg

No 15 tomatoes would weigh more than 1kg.

(2)

(ii) If Jane's assumption is **not** correct, could she get 15 tomatoes?
Justify your answer.

Yes she could get 15 tomatoes if they are lighter in weight

(1)

**(Total for Question 4 is 6 marks)**

*[Edexcel, GCSE, Autumn 2017, Paper 2F, Q4]*

**32**

Ellie

Ellie makes hats.
She makes at least 17 hats per hour.
She is paid 46p for each hat she makes.

$17 \times 46 = 782p$

£7.82 per hour.

Reaze is a waiter.
He works 35 hours and is paid a total of £266

Show that Ellie's hourly rate of pay is more than Reaze's hourly rate of pay.

Reaze

$266 \div 35 = £7.60$ per hour.

$£7.82 > £7.60$

**(Total for Question 13 is 3 marks)**

*[Edexcel, GCSE, Autumn 2017, Paper 2F, Q13]*

**33**

Mr Page uses oil to heat his home.

At the beginning of November there were 1000 litres of oil in his oil tank.

1000 litres

Mr Page bought enough oil to fill the tank completely.
He paid 50p per litre for this oil.
He paid a total amount of £750

750 ÷ 0·5 = 1500 litres

At the end of February Mr Page had 600 litres of oil in the tank.
He bought enough oil to fill the tank completely.
The cost of oil had increased by 4%.

Work out the total amount Mr Page paid for the oil he bought in February.

Capacity: 1000 + 1500 = 2500

2500 − 600 = 1900 Litres to fill the tank.

1900 × 0·5 × 1·04 = £988

£ 988

**(Total for Question 15 is 5 marks)**

*[Edexcel, GCSE, Autumn 2017, Paper 2F, Q15]*

**34**

The table gives information about the prices of cinema tickets.

| Cinema ticket | Price |
|---|---|
| adult ticket | £7.80 |
| child ticket | £5.80 |
| family ticket (for 4 people) | £24.30 |

Mr Edwards and his 3 children go to the cinema.

It is cheaper for Mr Edwards to buy 1 family ticket rather than 4 separate tickets.

(a) How much cheaper?

1 x 7.80 = 7.80
3 x 5.80 = 17.40
TOTAL = 25.20

25.20 - 24.30 = £0.90

(3)

The film starts at 6.45 pm.
The film lasts 102 minutes.

(b) What time does the film finish?

6:45 +15 7:00 +60 8:00 +27 8:27
+102

8:27 pm

(2)

**(Total for Question 4 is 5 marks)**

*[Edexcel, GCSE, Autumn 2017, Paper 3F, Q4]*

**35**

Fahima buys

2 packets of bread rolls costing £1.50 for each packet
1 bottle of ketchup costing £1.60
3 packets of sausages

$2 \times 1.50 = 3.00$
$1 \times 1.60 = 1.60$
TOTAL $= 4.60$

Fahima pays with a £10 note.
She gets 30p change.

Fahima works out that one packet of sausages costs £2.30

Is Fahima right?
You must show how you get your answer.

$10 - 4.60 = 5.40$
$5.40 - 0.30 = 5.10$
$5.10 \div 3 = £1.70$

No Fahima is wrong.
A pack of sausages is £1.70

**(Total for Question 7 is 3 marks)**

*[Edexcel, GCSE, Summer 2017, Paper 1F, Q7]*

**36**

5 tins of soup have a total weight of 1750 grams.
4 tins of soup and 3 packets of soup have a total weight of 1490 grams.

Work out the total weight of 3 tins of soup and 2 packets of soup.

Soup

5 tins = 1750g
÷5 → 1 tin = 350g
×4 → 4 tins = 1400g
3 tins = 1050g

1400 + 3 packets = 1490
÷3 → 3 packets = 90
1 packet = 30
×2 → 2 packets = 60

1050 + 60 = 1110g

1110 grams

**(Total for Question 17 is 4 marks)**

*[Edexcel, GCSE, Summer 2017, Paper 1F, Q17]*

**37**

Joanne wants to buy a dishwasher.

The dishwasher costs £372

Joanne will pay a deposit of £36

She will then pay the rest of the cost in 4 equal monthly payments.

How much is each monthly payment?

372 − 36 = 336

336 ÷ 4 = 84

£ 84

**(Total for Question 8 is 2 marks)**

*[Edexcel, GCSE, Summer 2017, Paper 3F, Q8]*

**38**

Andy went on holiday to Canada.
His flights cost a total of £1500

Andy stayed for 14 nights.
His hotel room cost $196 per night.

14 x 196 = $2744

Andy used wifi for 12 days.
Wifi cost $5 per day.

12 x 5 = $60

= $2804

The exchange rate was $1.90 to £1

(a) Work out the total cost of the flights, the hotel room and wifi.
Give your answer in pounds.

2804 ÷ 1.90 = £1475.79

1475.79 + £1500 = £2975.79

£ 2975.99

(5)

(b) If there were fewer dollars to £1, what effect would this have on the total cost, in pounds, of Andy's holiday?

If there are fewer dollars to £1 the total cost to Andy in pounds would increase.

(1)

**(Total for Question 14 is 6 marks)**

*[Edexcel, GCSE, Summer 2017, Paper 3F, Q14]*