

Top Ten

Solutions

Foundation GCSE Yellow - Set 1 Paper 1

	Q	Topic	My Mark	Max Marks
Non Calculator	1	Money calculations		6
	2	Calculating with fractions		7
	3	Percentages		4
	4	Ratio		4
	5	Algebraic manipulation		8
Calculator	6	Area and perimeter		5
	7	Angle facts		4
	8	Averages from lists		5
	9	Bar charts		5
	10	Probability		5
				53



Question 1 – Money calculations

Here are the prices of food and drinks in a café.

Food		Drinks	
Pizza	£1.40	Tea	65p
Burger	95p	Coffee	90p
Sandwich	£1.20	Cola	80p
Toast	90p	Juice	£1.00

- (a) Sally buys 2 cups of tea and a coffee.
How much does she pay in total?

$$2 \times 65p + 90p \quad [1] \text{ or units in pounds}$$

$$\pounds \quad \underline{2.20} \quad [2]$$

- (b) Julia buys a sandwich and a juice.
She pays with a £5 note.
How much change will she receive?

$$5 - (1.20 + 1) \quad [1] \text{ or equivalent}$$

$$\pounds \quad \underline{2.80} \quad [2]$$

- (c) Khadim wants to buy one item of food and one drink.
What is the least amount of money he could spend?

$$90p + 65p \quad [1] \text{ correct items identified}$$

$$\pounds \quad \underline{1.55} \quad [2]$$

Question 2 – Calculating with fractions

- a) Write $3\frac{2}{5}$ as an improper fraction.

$$\frac{17}{5} \quad [1]$$

[1]

Work out the following, giving your answers in their simplest form.

b) $\frac{5}{6} - \frac{3}{8}$

$$\frac{20}{24} - \frac{9}{24} \quad [1] \text{ allow any common denominator and one error}$$

$$\frac{11}{24} \quad [2]$$

[2]

(c) $\frac{20}{21} \times \frac{7}{10}$

$$\frac{20 \times 7}{21 \times 10} = \frac{140}{210} \quad [1]$$

$$\frac{2}{3} \quad [2]$$

[2]

(d) $\frac{3}{7} \div \frac{6}{11}$

$$\frac{3}{7} \times \frac{11}{6} \quad [1]$$

$$\frac{33}{42} \quad [2]$$

[2]

Question 3 – Percentages

(a) Find 55% of 940

$$\begin{aligned} 55\% &= 50\% + 5\% \\ &= 470 + 47 \quad [1] \text{ any correct method} \end{aligned}$$

$$\begin{array}{r} 517 \quad [2] \\ \hline \end{array} \quad [2]$$

(b) Find 67% of 150

$$\begin{aligned} 67\% &= 1\% \times 67 \\ &= 1.5 \times 67 \quad [1] \text{ any correct method} \end{aligned}$$

$$\begin{array}{r} 100.5 \quad [2] \\ \hline \end{array} \quad [2]$$

Question 4 – Ratio

(a) Write £4.20 : £1.40 : 70p in its simplest form.

$$420 : 140 : 70 \text{ [1]}$$

$$6 : 2 : 1 \text{ [2]}$$

.....
[2]

(b) Divide 108 in the ratio 4 : 5

$$4 + 5 = 9$$

$$108 \div 9 = 12 \text{ [1]}$$

$$4 \times 12 = 48$$

$$5 \times 12 = 60 \text{ [2]}$$

$$48 : 60 \text{ [2]}$$

.....
[2]

Question 5 - Algebraic manipulation

(a) Simplify:

i. $7a + b + 8a - 5a$

$10a \text{ or } b$ [1]

$10a + b$ [2]

[2]

ii. $p^3 \times p^2$

p^5 [1]

[1]

iii. $m^8 \div m^2$

m^6 [1]

[1]

(b) Work out the value of $4e - 2f$ when $e = 5$ and $f = 3$

$4 \times 5 - 2 \times 3$ [1]

14 [2]

[2]

(c) Solve:

$3x + 7 = 31$

$3x = 24$ [1] *correct first step seen*

$x = 8$ [2]

[2]

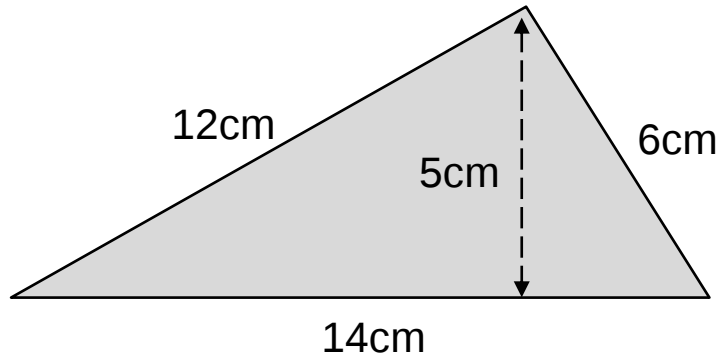


Calculator

Question 6 – Area and perimeter

(a) Below is a triangle.

not to scale



Calculate its area.

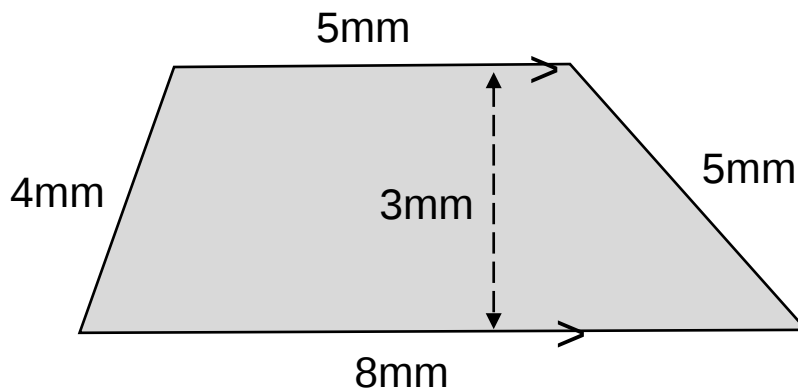
$$\frac{1}{2} \times 14 \times 5 \text{ [1] } \textit{or equivalent}$$

$$\dots\dots\dots 35 \text{ [2]} \text{ cm}^2$$

[2]

(b) Below is a trapezium.

not to scale



Calculate its area.

$$\frac{1}{2} \times (5 + 8) \times 3 \text{ [1]}$$

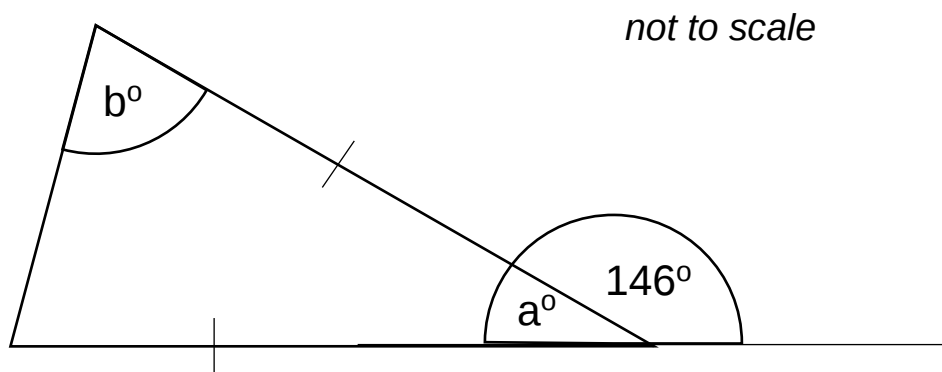
$$\frac{1}{2} \times 13 \times 3 \text{ [2]}$$

$$\dots\dots\dots 19.5 \text{ [3]} \text{ mm}^2$$

[3]

Question 7 – Angle facts

In the diagram below, find the size of the missing angles.



$$a = 180 - 146 \quad [1]$$

$$= 34 \quad [2]$$

$$b = (180 - 34) \div 2 \quad [1]$$

$$= 73 \quad [2]$$

$$a = \text{.....}^{0} \quad [2]$$

$$b = \text{.....}^{0} \quad [2]$$

Question 8 – Averages from lists

Twelve members of a running club take part in a run.

The data below shows the times taken, in hours, by the 12 runners to complete the run.

1.2	0.9	2.5	1.3	2.1	2.6
1.9	2.0	2.1	2.1	1.5	2.1

- (a) Write down the modal time taken to complete the run

2.1 [1]

[1]

- (b) Work out the median time taken

2.05 [1]

[1]

- (c) Calculate the mean of the times.
Give your answer correct to 1 decimal place.

$(1.2 + 0.9 + 2.5 + 1.3 + 2.1 + 2.6 + 1.9 + 2.0 + 2.1 + 2.1 + 1.5 + 2.1) \div 12$ [1]

1.9 [2]

[2]

- (d) One of the runner's time was incorrectly recorded.
They took longer to complete the race than first recorded.
Could this impact on the mode? Explain.

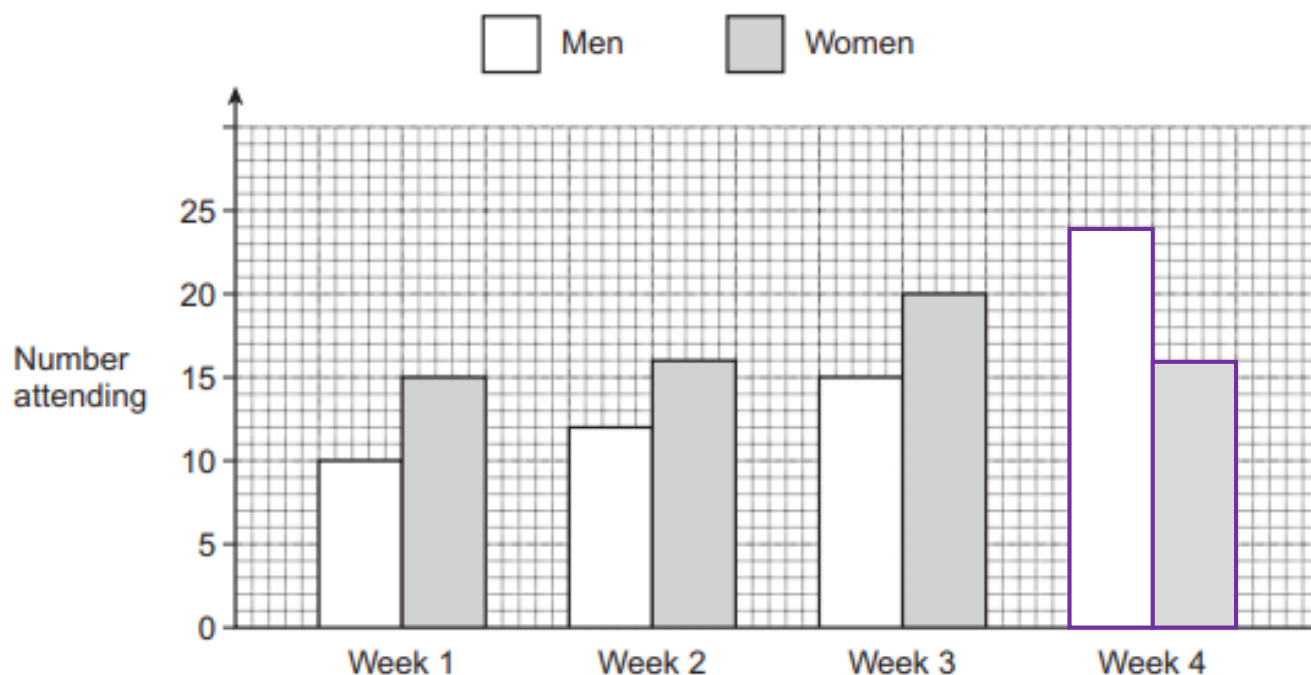
No. 2.1 hours will still be the most popular time

recorded if one of the times is altered. [1]

[1]

Question 9 – Bar charts

Alison records how many men and women attend her fitness class over four weeks. The bar chart shows the information for Weeks 1, 2 and 3.



(a) How many men attended in Week 2?

12 [1]

[1]

(b) How many people attended in Week 3 altogether?

15 + 20 [1]

35 [2]

[2]

(c) 24 women and 16 men attended the class in Week 4. Show this information on the bar chart

One bar drawn at correct height [1]

[2]

Both bars drawn at correct height [2]

Question 10 – Probability

Rayna has a fair 4-sided spinner.
The spinner can land on 3, 5, 7 or 9.

Rayna spins her spinner twice.
She adds the two numbers together to get the total.

- (a) Complete the table to show the total for each possible outcome.
One has been done for you.

		First spin				
		+	3	5	7	9
Second spin	3	6	8	10	12	
	5	8	10	12	14	
	7	10	12	14	16	
	9	12	14	16	18	

Up to 2 errors [1]

[2]

Fully correct [2]

- (b) What is the probability of Rayna's total is:

i. 10

$\frac{3}{16}$ [1]
.....
[1]

ii. Greater than 15

$\frac{3}{16}$ [1]
.....
[1]

iii. A square number

$\frac{2}{16}$ or $\frac{1}{8}$ [1]
.....
[1]