

GCSE Numeracy



Calculator Allowed

Intermediate Tier

Progress Check #1

90 Minutes

Student Name: _____

Question	Topic	Grade	Maximum Mark	Mark Awarded
1	Recipe Scaling	E	3	
2	Recipe Scaling	E	4	
3	Evaluating Formula	D	7	
4	Conversion Graph	D	5	
5	Best Value	D	6	
6	Best Value	D	5	
7	Profit/Loss	C	9	
8	Profit/Loss	C	7	
9	Income Tax	C	6	
10	Averages	E	7	
11	Mean of Grouped Data	D	4	
12a	Grouped Frequency Diagram	D	2	
12b	Estimating Mean	C	4	
12cd	Modal Median Groups	C	2	
13	Reverse Mean	B	4	
14	Reverse Mean	B	5	

1. The following is a list of ingredients to make 24 scones.

480g flour	80g sultanas	120g margarine
150ml milk	48g sugar	2 pinches of salt

Calculate how much salt, flour and milk would be needed to make 36 scones.

[3]

2. Here is a recipe for spaghetti with a tomato and basil sauce to serve 4 people.

Ingredients to serve 4 people	
For the spaghetti 400 g/14 oz plain flour 4 eggs	For the sauce 4 tablespoons olive oil 2 onions 800 g/28 oz fresh chopped tomatoes 20 leaves of fresh basil

- (a) Complete a version of this recipe to serve 10 people.

Ingredients to serve 10 people	
For the spaghetti g/..... oz plain flour eggs	For the sauce tablespoons olive oil onions g/..... oz fresh chopped tomatoes leaves of fresh basil

[3]

- (b) Use the information given in the recipe to complete this statement.

100 g is oz

[1]

3. The formula for converting Centigrade to Fahrenheit is given below

$$F = \frac{9C + 160}{5}$$

Use this formula to calculate the temperature in Fahrenheit when

(a) it is 25°C

[2]

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(b) it is 0°C

[2]

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(c) it is -8°C

[3]

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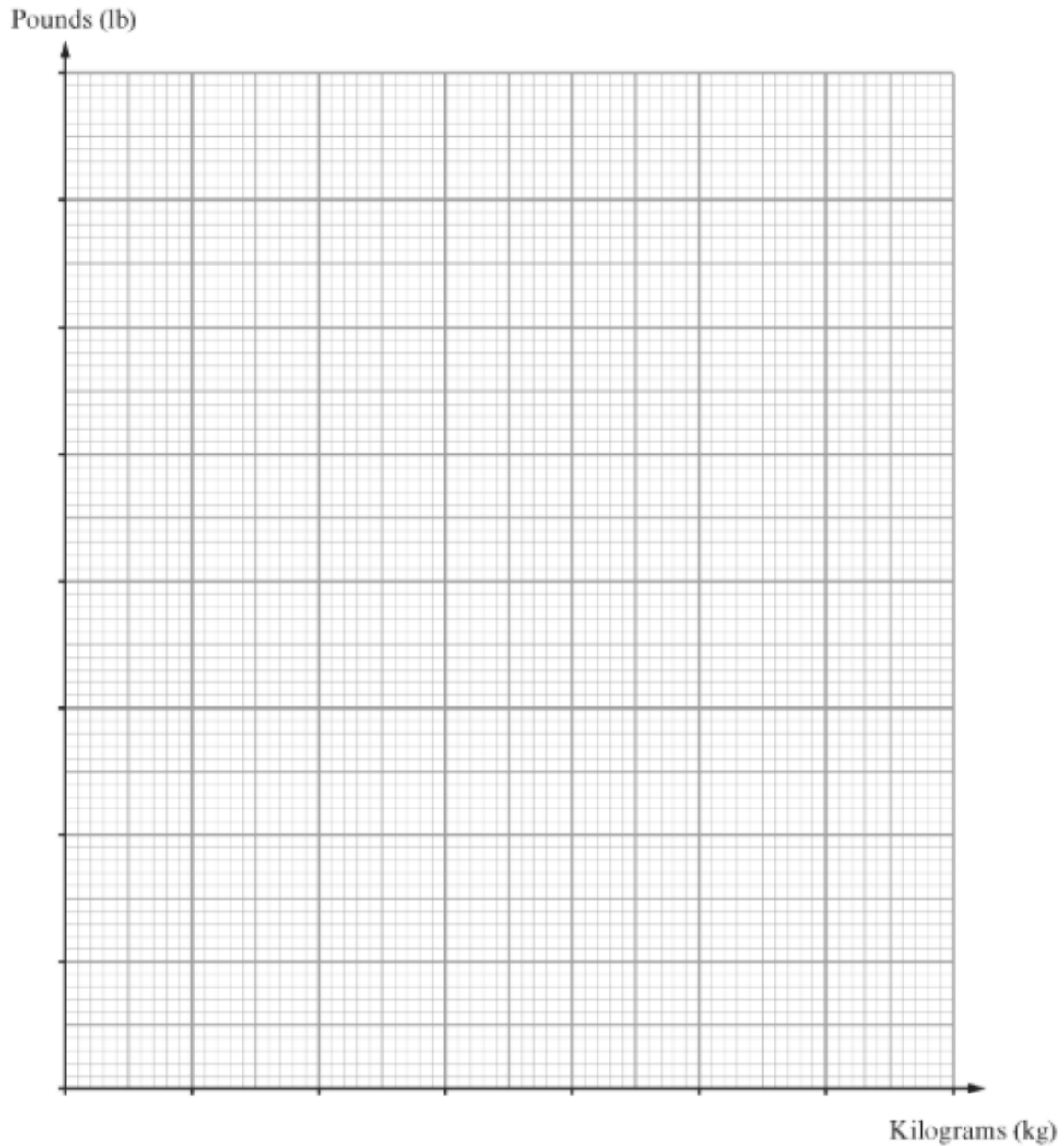
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4. In a hospital clinic the following information is used to convert between kilograms (kg) and pounds (lb).

Kilograms (kg)	0	39	68
Pounds (lb)	0	86	150

- (a) Use the information in the table to draw a conversion graph.

[2]



- (b) Use your graph to find an estimate for 50 kilograms in pounds.

[1]

- (c) Find an estimate for 200 pounds in kilograms.

[2]

5.

You will be assessed on the quality of written communication in this question.

“Cuppa - Jo” smooth roast coffee is sold in a variety of sizes.

200 grams	100 grams	400 grams
 £5.60	 £3	 £11.80

Decide which size of “Cuppa - Jo” smooth roast coffee is the best buy and why. You must show the calculations that support your decision.

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7. *You will be assessed on the quality of your written communication in this question.*

A band was hired to play at the local hall.

The hall was hired for 4 hours at a cost of £20 per hour.

The band cost £150 to hire.

Tickets for the event cost £5 each and 128 tickets were sold.

Calculate how much money was spent, how much money was collected and the profit or loss made on the event.

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[7]+[2]

9.

Loretta is paid in euros.
She is checking her tax bill for last year.

The tax rates last year were as follows:

- No tax on the first €3500 of earnings
- Earnings in excess of €3500 and up to €10 500: taxed at a rate of 25%
- Earnings above €10 500: taxed at a rate of 35%

Last year, Loretta's total earnings before tax were €34 500.

How much tax did Loretta pay in total?
You must show all your working.

[6]

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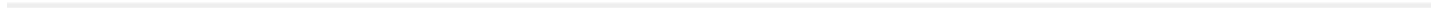
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Tax paid = €



10.

Last summer, Mr Williams had 10 tomato plants like the one shown below.



The number of tomatoes that grew on each plant is given below.

42 37 48 34 44 41 39 42 38 45

(a) Calculate the mean number of tomatoes per plant. [3]

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(b) Find the median number of tomatoes per plant. [2]

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(c) What is the modal number of tomatoes per plant? [1]

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(d) Next summer, Mr Williams plans to buy more tomato plants like the one above.

He says:

"On average, I should get about 41 tomatoes from each plant."

Give a reason why his data shows he is correct. [1]

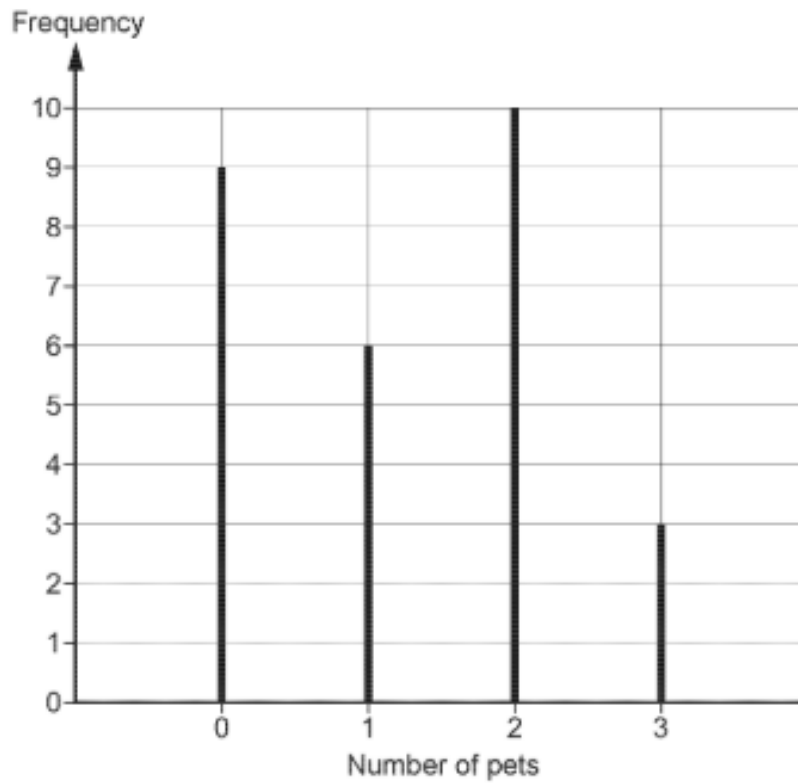
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11. The children in a primary school class were asked how many pets they each owned. The information was displayed on a vertical line diagram, as shown below.



Complete the frequency table below and calculate the mean number of pets per child. [4]

Number of pets	Frequency

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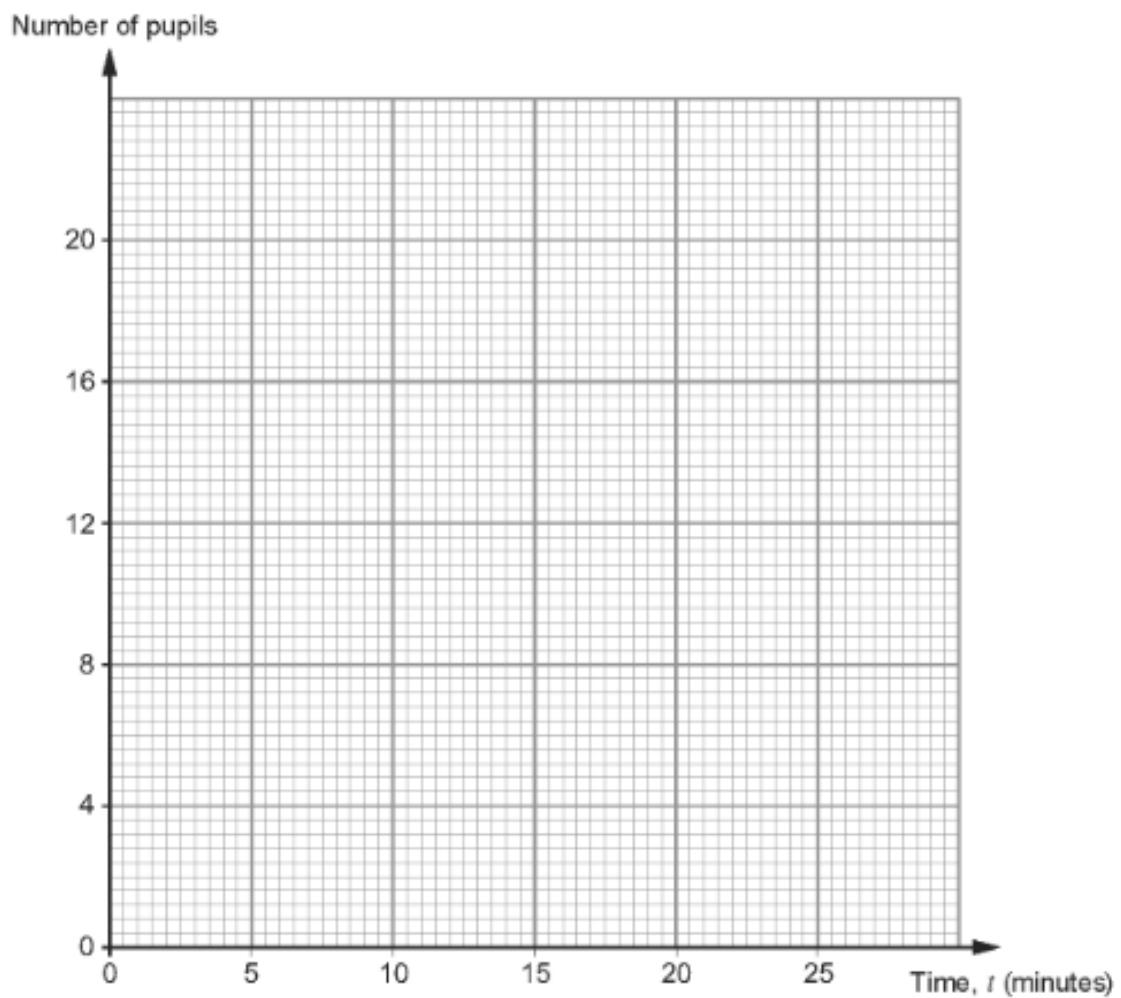
12.

A group of pupils was timed in completing a maths test. The results are shown in the grouped frequency table below.

Time, t (minutes)	Number of pupils
$0 < t \leq 5$	19
$5 < t \leq 10$	17
$10 < t \leq 15$	10
$15 < t \leq 20$	5
$20 < t \leq 25$	2

(a) Draw a grouped frequency diagram to illustrate these results.

[2]



(b) Calculate an estimate of the mean time taken to complete the test.

[4]

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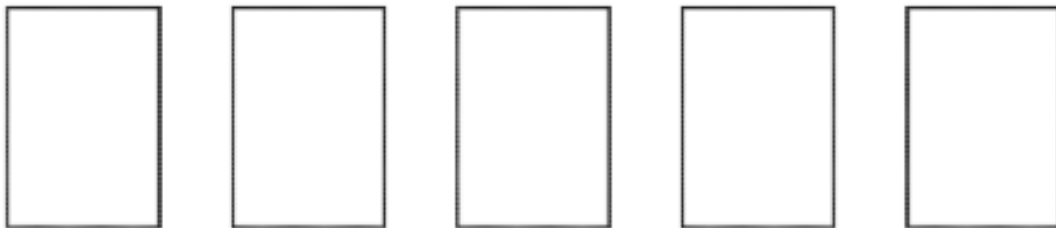
(d) Write down the modal group [1]

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(e) Write down the median group [1]

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13.



Five **single digit numbers** need to be written on the cards above.
The median, mode, mean and range of the numbers must all be 5.
Write a possible set of **single digit numbers** on the cards, in ascending order.

[4]

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14. There are 25 students in a class, 10 girls and 15 boys.

On one particular night, the mean time spend on homework by the boys was 1.6 hours and the mean time spent on homework by the girls was 2.1 hours.

Work out the mean time spent on homework by all the students in the class.

[5]

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