



**National 5 Mathematics
Homework
Prelim Revision - Jan 2017**



NON CALCULATOR QUESTIONS

1. Evaluate

$$1\frac{1}{8} \div \frac{3}{4}$$

2

2. Solve the inequality $5 - x > 2(x + 1)$

3

3. Given that $f(x) = x^2 + 5x$, evaluate $f(-3)$.

2

4. Multiply out the brackets and collect like terms.

$$(x - 3)(x^2 + 4x - 1)$$

3

5. A sample of students was asked how many times each had visited the cinema in the last three months.

The results are shown below.

4	5	4	1	4	3	2	2	4	6	2
3	4	4	1	3	1	2	3	1	1	

(a) From the above data, find the median, the lower quartile and the upper quartile.

3

(b) Calculate the semi-interquartile range.

1

(c) The same sample of students was asked how many times each had attended a football match in the same three months.

The data had a median of 5 and a semi-interquartile range of 3.

Make two appropriate comments comparing students visiting the cinema and students attending a football match.

2

CALCULATOR QUESTIONS

1. The population of a city is increasing at a steady rate of 2.4% per annum. The current population is 528 000.

What is the expected population in 4 years?

Give your answer to the nearest thousand.

3

2. Two groups of 6 students are given the same test.

(a) The marks of Group A are:

73 47 59 71 48 62.

Use an appropriate formula to calculate the mean and the standard deviation.

Show clearly all your working.

4

(b) In Group B, the mean is 60 and the standard deviation is 29.8.

Compare the results of the two groups.

2

3. A microwave oven is sold for £150.

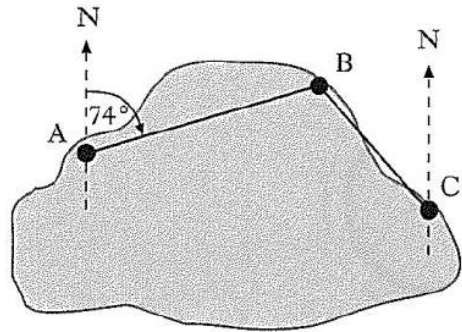
This price includes VAT at 20%.

Calculate the price of the microwave oven without VAT.

3

4. There are three mooring points on Lake Sorling.

- From A, the bearing of B is 074° .
- From C, the bearing of B is 310° .



(a) Calculate the size of angle ABC.

2

B is 230 metres from A and 110 metres from C.

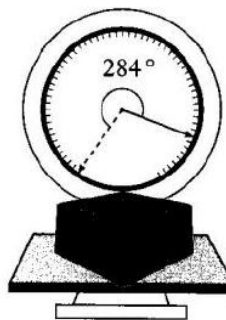
(b) Calculate the direct distance from A to C.
Give your answer to 3 significant figures.

4

5. A set of scales has a circular dial.

The pointer is 9 centimetres long.

The tip of the pointer moves through an arc of 2 centimetres for each 100 grams of weight on the scales.



A parcel, placed on the scales, moves the pointer through an angle of 284° .

Calculate the weight of the parcel.

4