



**General Certificate of Secondary Education
November 2012**

Mathematics

43601F

(Specification 4360)

Unit 1: Statistics and Number (Foundation)

Report on the Examination

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Set and published by the Assessment and Qualifications Alliance.

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General

The paper was accessible to the vast majority of students, and most appeared to be well practised in the required techniques. Some students failed to make efficient use of their calculators, and used pencil and paper methods when carrying out calculations.

Topics that were well done included:

- completing a frequency table using a tally
- finding the mode
- interpreting a pictogram
- finding the range and mean from a list of numbers
- combinations
- completing a stem-and-leaf diagram.

Topics which students found difficult included:

- comparing data
- comparing fractions
- calculating a percentage change
- relative frequency and its use.

Question 1

Students coped well with this question and it proved to be a good settler.

Question 2

This real-life problem solving question posed few difficulties for the vast majority of students. Common wrong answers included non-existent coins.

Question 3

Students had clearly practised using tallies to collect data and complete a frequency table. Part (a) was well answered. The problem element of part (b) proved to be a good discriminator.

Question 4

Students coped well with the money question in part (a). A variety of methods were employed, the most popular being to divide 20 by 4. A significant number of students used pencil and paper methods when calculating $20 \div 3.99$ instead of making use of a calculator. Part (b) posed few problems.

Question 5

Part (a) was well answered. Part (b) was similar with most students at least calculating the profit per tree or total revenue or total cost. A minority of students did not use correct money notation, writing £202.5 instead of £202.50

Question 6

Students were generally successful in calculating the mean and range of a list of numbers, with very few confusing them with the mode and/or median. However, part (c) was a good discriminator with many choosing to compare the means. A good number of students knew that the range was a measure of consistency and that in this situation a low range would be preferable. A common incorrect approach was to consider 'mean + range'.

Question 7

This question was accessible to the vast majority of students, with most realising that half of the circle represented 'cinema'.

Question 8

Part (a) was another good discriminator. Students who worked out $\frac{2}{3}$ of 40 were usually more successful than those who expressed 24 out of 40 as a fraction and tried to compare the two fractions. In part (b) most of the correct responses referred to an increase of the sample size, with only a minority of students realising that a survey conducted at a leisure centre would bias the results.

Question 9

Most students coped well with this more involved question testing ‘different outcomes’. However, a significant number struggled with the probability question in part (b), with some students unaware that a probability should be expressed as a fraction, decimal or percentage. A good proportion was able to use their probability to answer the problem question in part (c).

Question 10

Part (a) posed few problems, and a significant number of students coped well with part (b). However, only a minority were able to calculate the percentage increase in part (c) correctly. Students who chose to use a build-up method were rarely successful.

Question 11

The stem-and-leaf diagram in part (a) was generally well done with only a minority of students omitting the key or not ordering the leaves. Most students were able to access the problem question in part (b) but only a minority were able to find both solutions.

Question 12

A significant number of students confused relative frequency with frequency. A good number of students were able to access the question in part (b), but only a minority were able to complete the table correctly.

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