

Chief Examiner's Report

General comments

Once again, some candidates produced very good scripts, but many more had serious problems with parts of the paper, suggesting they were not ready to take the test.

Presentation of work and answers continues to be a problem, with candidates losing marks through a failure to show a clear method of solution. Candidates should be reminded how to answer and set out questions so that they do not get lost in multi-stage calculations. Candidates should also be aware that marks are often available for a correct method even if they get an incorrect answer.

Most centres did attach the graph paper to candidate's answer booklets this time. Candidates must write their name and centre details on their graph paper because if a graph becomes separated from the answer booklet and the graph paper does not have the required details, it is not possible to reunite them.

Often answers were not given to an appropriate degree of accuracy, for example pounds given to more than two decimal places or one decimal place. Candidates frequently rounded between the stages of a calculation rather than just at the end, resulting in problems with accuracy. Many candidates truncated their answers instead of rounding correctly. Candidates should be encouraged to use checking techniques routinely and in particular to check that their final answers are reasonable in the context.

Candidates should be encouraged to make the most of the 15 minutes reading time and to read the questions carefully. It is acceptable for candidates to underline information on their question paper as they read through and to consider strategies and make rough notes on the approach to take, though they should not start answering the questions in their answer booklets until the actual start of the test. Many candidates would benefit from practice in this skill. Candidates should be advised that rough notes and workings on the question paper will not be taken into consideration by the examiner; the examiner will mark only what is in the answer booklet. If candidates do their workings on the question paper and only show their final answers in the answer booklet they will not be given any credit for incorrect answers, even when these are close to the correct answers.

Comments on the paper

Question 1

- (a) This was reasonably well answered but often candidates scaled the rye bread value up from 100 grams incorrectly. Because of the ambiguous wording, credit was given to candidates who omitted the orange juice from their calculations.
- (b) Very few candidates gave acceptable fractions, but many gained a mark for $65\mu\text{g}$ seen. Some gave their answer as a percentage instead of a fraction as the question asked.

Question 2

- (a) Many candidates were able to do the correct calculations but went on to lose the mark as they did not give their answer in correct money notation (ie pence should be given to two decimal places, not one or three).
- (b) A lot of good answers were seen, but some candidates lost marks by rounding too early.
- (c) Generally candidates had a good idea what to do but again early rounding often led to unacceptable answers. The question asked for an *estimate* because of the nature of the data,

but some candidates responded to this by rounding the data considerably. Candidates need to be aware of the difference between calculating an estimate and estimating.

- (d) Most candidates left out one or more stages in their checking procedures, with many omitting this part completely.
- (e) Very few correct solutions were seen; often, those who had a good idea divided by 56 instead of 0.56.

Question 3

- (a) Common errors included calculating the area of *one* flower bed instead of three, forgetting to scale up or using the wrong formula for area of a circle.
- (b) A lot of candidates incorrectly used the vertical height instead of using Pythagoras to find the main part of the rod.
- (c, d, e) Few candidates managed to form correct equations, though some still managed to work out the correct number of each type of shrub through trial and improvement. Attempts at checks tended to be weak.

Question 4

- (a) Very few gave the correct answer in hectares, mainly because of an inability to convert from mm^2 to m^2 . The most common error was dividing by 1 000 instead of $1\,000^2$. Candidate who converted to metres before finding the area tended to fare best.
- (b) Some good answers were seen, though the rearrangement of the formula created problems for many.
- (c) Most candidates divided by 3.3 instead of 3.3^2 and consequently gave a wrong answer of £530.30
- (d) This was reasonably well answered, with many candidates gaining 2 marks for correctly calculating that it would take 6 years for the property to exceed £300 000.

Question 5

- (a) Few candidates rearranged the formula to find P correctly, but some gained a mark for a correct substitution into the formula.
- (b) Quite a few gained both marks on follow through from 5a, although some only got one mark for getting as far as the total amount going to charities.

Question 6 – Extended answer question

- (a) Quite a few candidates got the first mark, but many lost marks by looking too specifically at one month rather than similarities/differences across a range of months.
- (b) Titles were often missing and the x-axis was often not labelled as continuous. Very few used the upper boundaries but most gained a mark for plotting at the correct heights. The points were generally joined correctly.
- (c) Some candidates plotted the quartiles accurately, but did not always go on to calculate a value; others showed only one value (lower quartile or upper quartile or sometimes median).

- (d) Few correct answers were seen, but some gained a mark by finding the time in seconds (20 615) but then failed to convert correctly into hours or hours and minutes.
- (e) Not many reached this stage but of those who did, many used a completely incorrect method for finding the mean of grouped data and just divided the total number of calls (1 995) by the number of classes (6) to give an answer of 332.5 seconds.
- (f) Of those candidates who reached this far, many were able to do the correct calculations but often did not give their answer in an appropriate form for money (ie whole pounds or 2 decimal places).

Recommendations to centres

Candidates would benefit from further guidance and practice in:

- reading the questions carefully and answering the questions set; using the 15 minutes reading time wisely
- using a scientific calculator correctly for a range of calculations/functions
- rounding, including when to round up or down, and appropriate degrees of accuracy. The most appropriate degree of accuracy for the answer is usually the same as that used in the question. Some candidates still lose marks for truncating their answers instead of rounding. Early rounding in multi-stage calculations continues to be a problem; this can make final answers inaccurate, sometimes by very large amounts. Candidates should only round their answers at the end.
- converting between units, including square units
- working with large numbers
- working with percentages, including compound percentages
- working with fractions and ratios, including using simplest terms
- using formulae
- use of Pythagoras and trigonometry
- calculating the area of a range of shapes
- applying scales
- forming and manipulating algebraic equations
- drawing graphs and charts, including scatter graphs and graphs and charts requiring frequency density or cumulative frequency
- interpreting and comparing statistical data, including reading and interpreting graphs
- understanding the language of statistics, including the difference between calculating estimates and estimating
- calculating the (estimated) mean of grouped data
- presentation of work, including workings, final answers and written answers.
At this level, candidates are required to perform multi-stage calculations; if these are not clear to follow, candidates may miss out on marks for partially correct answers. Candidates

are not penalised for their lack of communication skills, however poorly worded answers or illegible handwriting may lead to candidates losing marks if their intended meaning is not clear to the examiner.

- checking procedures. In particular candidates should be shown how to **routinely** check that their final answers are reasonable in the context, not just when a check is required by the question.

Silvana Taylor
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