

Chief Examiner's Report

The pass mark for this paper was 19 (out of 50), with 24.2% of City & Guilds candidates achieving a test 'pass'.

General comments

Some candidates produced very good scripts, but many more had serious problems with parts of the paper.

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 aware that marks are often available for a correct method even when the candidate has gone on to arrive at an incorrect answer. Some candidates used red ink or pencil; others did not put the question number next to their solution, making it difficult for examiners to follow. Candidates should be reminded how to answer and set out questions.

Most candidates used graph paper to draw their graph, but some used lined paper. Candidates should be reminded that they will lose most of the available marks if they attempt to draw graphs on lined paper. Candidates must write their name and centre details on their graph paper and if possible attach it to the answer booklet as instructed. If candidates' graphs become separated from their answer booklets and graph paper does not have the required details, it is not possible to reunite them. Centres are requested to secure additional sheets to answer booklets prior to despatch to City & Guilds, ideally in the exam room.

Often answers were not given to an appropriate degree of accuracy, for example pounds given to more than two decimal places. 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.

This is the second series since the introduction of 15 minutes reading time before the start of the 1½ hour test. Candidates should be encouraged to make the most of this 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. Some candidates only showed their final answers in the answer booklet and so were not able to be given any credit even when their answer was close to the correct one.

Comments on the paper

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
- 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
- understanding the language of statistics, including calculating estimates as opposed to estimating
- calculating the 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 check that their final answers are reasonable.

Question 1

- This was generally answered very well, with most candidates giving an acceptable approximate fraction. Some candidates did not reduce their fraction or did not give it as a proper fraction. The most common error was truncating the values; a few candidates gave their answer as a percentage or a ratio.
- Few candidates did the correct percentage calculation to find the number of new cars registered in 2002. Most candidates found 99.4% of the 2003 value; others found 100.6% of the 2003 value; very few understood that the number given was 100.6% of the value they needed to find. A few used 100.06%.
- Less than a quarter of candidates found the value of the free fuel correctly; most either missed out a stage or did one part of the calculation the wrong way round (eg multiplying by 0.621 when converting miles to kilometres). Many candidates lost accuracy by rounding early (or truncating) their answers to part calculations, instead of just rounding at the end. This sometimes meant that they missed out on part marks which were available.

Question 2

There was a very high incidence of omissions on this question.

- a) Few candidates were able to sort their way through all the information to find the correct maximum time for the download. Most candidates missed out one or more stages. Some candidates who made very good attempts lost marks by rounding early, or truncated in some of the steps.
- b) About half of the candidates used estimation appropriately to check the advertising claim. Some candidates did the calculation but did not explain it, and so did not answer the question asked.
- c) Few candidates calculated correctly the percentage of the bites that carry the contents of the file. The most common error was finding the smaller number as a percentage of the larger number.

Question 3

- a) Nearly a quarter of the candidates answered this part correctly, but many struggled either with the large numbers or with working out what to do.
- b) There were a few very good interpretations of the two pie charts and their significance when taken together, but most candidates did not really understand what they were showing or their relationship. Some candidates did not read the titles and thought they showed the same information over time. Some candidates did not understand what a transaction is.
- c) Again many candidates struggled with either the large numbers or with working out what to do. Many gave their answer as a percentage.
- d) Most candidates found the April value as a percentage of the July value, or vice versa, instead of the percentage change.
- e) Very few candidates were able to use compound percentage increase correctly.
- f) About one third of candidates identified that the BBC made an assumption that the trend would hold.

Question 4

- a) Most candidates knew the basic sine formula to use, but many struggled with re-arranging it.
- b) About a quarter of candidates calculated correctly the distance between the wall and the foot of the ladder using the HSE recommendations, but comparative comments tended to be weak.
- c) About a quarter of candidates found the minimum hourly income the window cleaner needs. Some candidates gave answers that common sense should have told them were wrong, for example 10p an hour or over £1 000 an hour.

Question 5

- a) About half of the candidates did the correct calculations to find the average number of visitors per hour, but many lost the mark because they did not give their answer to the nearest 10 as the question asked.
- b) Most candidates struggled with this part. The most common errors were not applying the scale at all, or applying it at the end, but only multiplying by 1 250 instead of $1\,250^2$. Some candidates also struggled with changing the units from mm to m or mm^2 to m^2 .

- c) This part was generally done much better, with many candidates finding the correct building costs. Some candidates did not reduce their ratio or expressed it the wrong way round.

Question 6 – Extended answer question

- a) Candidates struggled to draw a histogram. Most drew a simple bar chart or a line graph. Many candidates omitted this part completely.
- b) Most candidates made a correct observation about the distribution.
- c) About a third of the candidates who got this far calculated the mean correctly, though some did not give their answer to an appropriate degree of accuracy. The last class being a different size caught out many candidates, but they gained some credit if they showed their workings. Some used the class boundaries instead of the midpoints.
- d) Most candidates who attempted this part identified correctly the class with the median attendance.
- e) Hardly any candidates identified correctly the effect on the mean and median of changing one of the values.
- f) Most candidates who attempted this part identified correctly the modal class.
- g) Most candidates who got this far identified one of the averages and a reason, though this was often just a definition of the average chosen.
- h) Very few candidates produced the correct equations; many candidates missed the simple equation from adult tickets plus child tickets totalling 24.
- i/j) Most candidates who had two correct equations in part h found the correct number of adult tickets and child tickets. However they did not always show how they found the second value, which meant that it was not clear whether their check in j was a valid check or a repeat calculation using the same equation

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