
Functional Skills Certificate

MATHEMATICS

4368 Level 2

Report on the Examination

4368

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General

The four tasks provided the opportunity for students to demonstrate competence in the three process skills of representing, analysing and interpreting. There were a significant number of multi-step, problem solving questions, which many students found challenging, and, in some cases, time consuming. This resulted in a higher than usual number of non-attempts, particularly in task 4.

Many students presented solutions clearly and showed their working in full using a methodical step-by-step approach. This means that method marks were more likely to be gained, particularly after numerical slips or a previous incorrect method. However, there were also a significant number of students who communicated their answers and method in a haphazard and inefficient way, often leaving out crucial steps in their working.

Most students made a correct conclusion in those questions where they were asked to do so, and most used a calculator where appropriate. A poor response to 'standard' questions and a lack of awareness of information contained in the pre-release data sheet provided evidence that some candidates were not as prepared for this assessment as they might have been.

Topics that were well answered included:

- a problem involving time (1(a))
- a straightforward one-step problem in context (1(c))
- following instructions to plan a breakfast (2(b)).

Topics which students found difficult included:

- solving multi-step problems involving ratio and proportion (2(c) and 2(d))
- working out the mean from a frequency table (3(a))
- working out the volume of a prism using area of base \times height (4(b))
- solving a multi-step problem involving area, perimeter, rounding and profit (4(c))
- checking a one operation calculation (4(d) check).

Task 1 Hot Air Balloon

1 (a) Students generally answered this question well, with nearly half scoring full marks. Most knew what to do but many made errors when subtracting the flight start time from the flight finish time, particularly for flights 2 and 3. Some added the flight times correctly but failed to include the 26 hours already flown. The usual conceptual errors when converting between hours expressed as decimals and hours and minutes were also seen; for example, 3.5 hours for flight 1 sometimes became 3 hours 50 minutes, and 8 hours 65 minutes, the correct total time for the three flights, sometimes became 8.65 hours.

1 (b) Approximately half of the students circled the correct answer.

1 (c) This question was answered well, with most students attempting to work out $3198 \div 3.9$ but not all being able to do this accurately, possibly because they did not use a calculator. The check was done fairly well, although a significant number of students failed to complete a full check as all they did was round the values.

1 (d) Although there were some very good answers, most students found this multi-step question difficult. The marks awarded were spread fairly evenly from 0 to 7, which meant that the question discriminated well. Less successful candidates found the amount of data hard to deal with and often ignored some of it. Typical errors included adding 7 and 9 to work out the total number of flights and dealing with 80% incorrectly, either by ignoring it completely

or by working out 80% of the wrong value. Some students also added costs and income instead of finding the difference between them to work out the profit.

Task 2 Muesli

- 2 (a)** This question was answered well by those who knew a method for working out the percentage of a quantity, which is a basic requirement for those wishing to be functional in mathematics. A significant number of students, however, did not demonstrate this skill. A number of students lost a mark because they did not show a full method, which is required in a 'show that' question.
- 2 (b)** This question was done well, with some students producing very good and well communicated answers.
- 2 (c)** Many students found this question difficult, with nearly half scoring zero or making no attempt. The main problem was incorrect scaling from 1 kilogram to 325 grams and from 100 grams to 35 grams. It was possible to score 2 marks without doing this correctly, rewarding many of those who made an attempt. Other errors included using 100 grams for 1 kilogram and using £3.84 (from 4×96) instead of 96p, which was the given total cost of the other ingredients.
- 2 (d)** The combination of the two ratio-based skills of working out two fifths of a quantity given three fifths and then sharing the answer in the ratio of 4 : 1 proved too difficult for the majority of students, with close to 70% scoring zero or making no attempt. A common error when attempting to share in the ratio of 4 : 1 was to divide by 4

Task 3 Canteen Survey

- 3 (a)** The majority of candidates did not show a correct method to find the mean from the discrete frequency table despite similar questions being on many previous papers. As usual there were many conceptual misunderstandings displayed, with many of these involving division by 5 instead of 100
- 3 (b)** Just over half of the candidates managed to show the full method required to obtain 150 sandwiches.
- 3 (c)** There were very few fully correct responses to this question, with many candidates scoring 3 marks for working out the profit after selling 30 of each sandwich. Most students did not appreciate that the number of each sandwich that Betty should make needed to be in proportion to the numbers given in the answers to question **B** in the survey.
- 3 (d)** Most candidates used the grid to attempt a bar chart to show the given information, with the majority scoring at least 1 mark but with relatively few scoring all 4 marks. Failing to label both scales and leaving equal gaps between each bar were the main omissions. Some attempted a bar chart but not on the grid.

Task 4 Room Makeover

- 4 (a)** This question was answered reasonably well, with close to half of the students showing a full method for working out the area of the L-shape and gaining full marks. A significant proportion attempted the question but displayed little awareness of the concept of area, either adding the edge lengths or multiplying them together.

- 4 (b)** A fairly large proportion did not attempt this question and many of those who did scored zero. Multiplying a base area by the height to find the volume of a prism is clearly not well known and many students used an invalid method to find the volume. Some then failed to multiply by 141, the room factor, f , and others, after obtaining a value for the heat output, h , chose an incorrect size of radiator. Some failed to use the formula given on the data sheet.
- 4 (c)** Some very good, fully correct and well-communicated answers were seen, but nearly half of the students scored zero or made no attempt at this demanding multi-step question. However, the question proved to be another good discriminator, with the full range of marks being obtained. Most of those who attempted the question correctly worked out the amount of laminate flooring needed; however, some of these either failed to round or rounded incorrectly when working out the cost. Calculating the perimeter of the room proved a stumbling block, particularly for those who did not include the unmarked edges and those who used the area of the room to work out the length of edging required. Again, incorrect or no rounding was seen.
- 4 (d)** Nearly half of the students scored zero or made no attempt at this relatively straightforward question. Multiplying by $7\frac{3}{4}$ caused a lot of problems, with relatively few students first converting to 7.75

Nearly one quarter of students did not attempt the check, and of those who did only about one third scored the available mark. The standard 'reverse' method was the most frequently seen.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA Website.