
Functional Skills Certificate

MATHEMATICS

4368 Level 2

Report on the Examination

4368

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General

Many of the students taking this assessment were able to demonstrate competence in the three process skills of representing, analysing and interpreting. For the majority, this was achieved within the first two or three tasks. Many students found the task about Customer satisfaction difficult, with a significant proportion making no attempt on any of the questions. This could have been for a number of reasons including:

- failure to fully engage in the pre-release Data sheet before the exam
- the mathematical topics involved
- time pressure.

Some students failed to give full answers to questions and, consequently, did not always score marks awarded for communication. Centres should encourage students to give full, clearly communicated solutions, with all working and relevant units shown. This includes making a conclusion where required.

Overall, calculators were used effectively, but many students may not have had access to a pair of compasses.

Topics that were reasonably well answered included:

- solving a variety of problems using ratio (Questions 1(b), 2(b) and 2(c))
- completing a plan to a given scale (Question 3(a))
- solving a multi-step problem where values needed to be rounded up (Question 3(b)).

Topics which students found difficult included:

- checking that two quantities are in a given ratio (Question 1(b))
- converting a decimal number of hours to hours and minutes or vice versa (Question 1(c))
- checking the answer to a two-step calculation (Question 2(b))
- converting units in a multi-step problem (Question 3(c))
- working out the mean of values given in a frequency table (Question 4(a))
- working out one value as a percentage of another (Question 4(c)).

Task 1 Concert

- (a) This question was reasonably well answered, with many students scoring at least 4 marks. Nearly all managed to score the 2 marks for using the rules for floor space correctly, but using the rules for the exit doors caused problems for many. Here, working out that the maximum number of people for a 1200 mm door was 230 was the main source of error. Others did not ignore the widest exit door and many allocated 200 people to the 1050mm wide door. A minority failed to compare the two values and choose the lowest.
- (b) Many answered this question well, although a significant number did not correctly share their quantity in the ratio 5 : 4. Of those who did, some lost a mark by failing to communicate their answer fully.
- To score the **check** mark students had to clearly demonstrate that they appreciated the meaning of the term 'ratio', with division of both of the amounts that Liz and Omar received by 40 being a common correct answer. Overall, this was done poorly.
- (c) Nearly all students tried to work out the expected time taken to drive to the concert, but only many used an incorrect method, often making an estimate of 1 hour 40 minutes. A significant minority divided 70 by 40 correctly, but did not convert 1.75 hours into 1 hour 45 minutes, often interpreting 1.75 hours as 1 hour 75 minutes. Some worked out that there was 1 hour 40 minutes available to drive the 70 miles but interpreted this as 1.4 hours and then compared it with 1.75. Candidates who dealt with 'decimal times' incorrectly could score a maximum of 3 marks.

Task 2 Calories

- (a) Overall, the majority of students circled the correct answer.
- (b) This question was answered reasonably well, with a reasonable number of students gaining full marks. Nearly all of these first worked out that Jack burned 12.5 calories per minute. The **check** was badly done, with most students attempting an incomplete reverse method.
- (c) Answers to questions where students are asked to give a plan are best presented in a list, with necessary calculations separated from the final plan. Many did this and managed to score full marks, but some jumbled everything together, often incoherently, and lost a mark for unclear communication. Some students also lost marks by failing to give all the required information in their plan; for example, the level for a particular machine. Most students worked out the calories burned by allocating a simple fraction of 1 hour such as 10, 15 or 20 minutes to each machine; a significant minority did this incorrectly; for example, by dividing the calories per hour by 10 instead of 6 to work out the calories burned in 10 minutes. Others used the unitary approach, by first calculating the number of calories burned per minute for each machine at the chosen level.
- (d) This question was done well, with a high proportion of students scoring full marks. Nearly all managed to calculate the number of calories in 250 g of watermelon. Working out the number of calories in 125 g of strawberries caused more problems.

Task 3 Garden

- (a) This was answered fairly well, with students who used the scale correctly often scoring full marks. However, many did not score the marks for the circular flower bed; they either missed it out completely, drew it as a rectangle or confused radius with diameter. Many attempted to draw a freehand circle. Nearly all students followed the instruction to label the different parts of the garden.
- (b) This question was answered reasonably well. Common errors included:
- not appreciating that the area of patio was required
 - using $15 + 4.5$ to work out the patio area instead of 15×4.5
 - not rounding up to work out the number of packs of paving stones required.
- (c) A fairly large proportion of the students scored zero or made no attempt at this question. However, most of the rest used the given formula correctly, although a significant number did not use 50 cm for half a metre. Using the volume of soil in cm^3 to work out the number of bags of soil required also caused a problem for some, who occasionally failed to divide by both 1000 and 800 or round up their final answer.

Task 4 Customer satisfaction

This task was not done well, with many students scoring zero or making no attempt at the questions.

- (a) The relatively small number of students who knew how to work out the mean from a frequency table did well. Others used a variety of incorrect methods, often arriving at a value that could not possibly represent a mean score between 0 and 10. Some scored 1 mark for dividing an invalid total by the given 1296. Most of those students who obtained a mean score converted it to a customer rating correctly but not all went on to plot their value on the graph as required.
- (b) Many of the students who attempted this question gave a fully detailed and correct description. Others gave a correct description, but with insufficient detail to score both marks

- (c) Many students correctly identified the numbers of happy and unhappy customers, but only a relatively small proportion went on to find the correct customer rating. A common error was the incorrect rounding of the percentage of unhappy customers to 10% instead of 11%.
- (d) This question was done reasonably well by those who attempted it, with a reasonable number of students able to compare 55% of 1128 with 615 correctly.

Mark Ranges and Award of Grades

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