Examiners' Report
Principal Examiner Feedback

January 2020

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Introduction

This exam paper was accessible to many and gave a good range of marks for the award of a pass.

There was evidence to suggest that students did not always choose to use a calculator on section A and sometimes when they did they chose to insert decimal points in the answer where there should not have been one.

Students continue to mix up methods, especially for area and perimeter of a rectangle and volume of a cuboid.

Students must read questions carefully so that they give the answer that is required, so for instance finding the change from £20 for a bill and not just the total of the bill.

Students must make sure they bring mathematical equipment to the examination and use it correctly as there was evidence that some were unable to measure the length of the line or draw an angle of 130° of because of this.

A lack of working for questions that were almost correct caused a lot of students to lose method marks.

Report on Individual Questions.

Section A

Question 1

Nearly all students were able to achieve the first 3 marks on the paper by correctly using their calculator to find the answers to these calculations.

In part (a) the mistake we sometimes saw was a student adding all three numbers rather than subtracting 8.47.

In part (b) we saw mostly correct answers but a few students incorrectly thought they should insert a decimal point because they were multiplying by 8.2.

In part (c) we also saw mostly correct answers with the occasional decimal point inserted unnecessarily.

Question 2

For part (a) we saw a pleasing number of students knowing that ¾ is 0.75 when written as a decimal. A few students still think the answer is 3.4.

In part (b) we still found that several students were not able to write a number correct to one decimal place with 12.63 often being given as 12.7 or students moving the decimal point either way and giving numbers such as 126.3 and 1.263.

Question 3

Part (a) was fairly well answered with many students gaining full marks. A few students worked out $\frac{5}{4}$ of 340 instead by multiplying by 5 and dividing by. Some students benefitted from a method mark when they found $\frac{1}{5}$ of 340.

In part (b) quite a large number of students were able to correctly work out the multiplication of a fraction by a whole number. Some, however, felt that both the numerator and the denominator of the fraction should be multiplied by the whole number

A good number of students gained full marks in part (c). A common misconception was to divide the amount by the percentage giving 30.6, a commonly seen incorrect answer. Some students correctly worked out 30% of 920 but then subtracted it from 920 to get 644 and were awarded M1A0

Question 4

For part (a) of this question a very good number of students were able to correctly identify the multiple of 7.

In part (b) fewer students were able to write down a common factor of 24 and 32 from the list with 3 being the most common incorrect answer.

For part (c) we saw many correct answers for the two numbers that multiplied to total 420.

Throughout this question there were a minority of students who gave numbers that were not in the list and therefore did not gain marks.

Question 5

In part (a) students were asked to work out a sum where the numbers were in metres and centimetres. The biggest mistake was to fail to give the units of the answer and for a correct figure without units 1 mark was awarded. Some students did not know how many centimetres in a metre and we saw values such as 3460 written for 3 m 46 cm. In addition some thought that metres and centimetres could be combined as if all were the same unit, so 3 m 46 cm was given as 49 cm. A few students added all the measurements and were awarded a special case B1 if they did this correctly and included the units.

For part (b) where students had to change 4300 millilitres to litres, the modal mark was zero. Students gave a variety of answers generally suggesting they thought there were 100 millilitres in a litre but some also added additional zeros suggesting they thought that a litre was less than a millilitre.

In part (c) students needed to change 58 days into a time in weeks and days. A good number gave a correct answer and if they did not gain 2 marks, students frequently gained 1 mark for giving 8 weeks but an incorrect number of days.

Question 6

This 'shopping bill' and change question was well answered by several students, who in many cases showed their working or gained correct results. Some gave an answer close to the correct one but with no working or a few odd figures on the page, so we could not award any marks as there was no evidence of correct working; it must be stressed to students that for any questions with more than one mark they are running a risk of gaining no marks if they make a slight error and have not shown any working.

A handful of students did not read the question thoroughly enough and made careless mistakes such as working out the cost of 1 of each item rather than the given amount of each item; if such students worked correctly they could gain special case marks. Some students forgot to work out the change after finding the total cost and others worked in inconsistent units.

Question 7

We saw several correct answers for the volume of the cuboid, but there are still many students who get the term volume confused and do not understand what is required. Adding the three given sides and giving an answer of 22 was very commonly seen. A few students found the total surface area and others gave the total length of all 12 edges.

Question 8

Most were able to tell us that Friday was the day of the 1st June 2018, however the date two weeks before the 7th June was more difficult. Problems included not knowing how many days are in May, not knowing which month comes before June, counting back 3 weeks rather than 2, and counting on 2 weeks instead of counting back.

Question 9

In part (a) the vast majority of students were able to correctly read the number shown by the arrow as one mark on the scale was worth one unit.

Part (b) was done less well than part (a) as the scale was one where each mark on the scale is worth two units. Some students put marks between the marks on the scale and felt the number 456 was on one of these; it should be noted that this skill is not required on level 1

For part (c) many students knew the 5 in 456 was 50 or 5 tens. A common mistake was to state that it was 5 tenths.

Part (d) was also done reasonably well with many know that 472 written to the nearest 100 is 500. Incorrect answers included 400 and 47 200.

Question 10

In part (a) students were, on the whole, very competent at drawing a bar chart with many instances of full marks being awarded. Those that didn't gain full marks were often awarded two marks because of not labelling the bars.

In part (b) most students were able to tell us that Gemma asked 28 friends but a few gave the answer as 5 which was the number of different vegetables that were given.

Question 11

This question involved time with part (a) requiring students to add hands to an analogue clock face. Many students were able to correctly add the clock hands to show the time of quarter to five. In some cases it was very hard to tell which of the hands of the clock was longer and if the same or the wrong way round, students could benefit from one mark which was frequently awarded. For the hour hand, most students had it pointing directly at 5, not slightly before the 5 as it should have been; this was condoned but students should be familiar with this.

Part (b) required students to five the time 35 minutes later than a quarter to five. This was poorly done with few appearing to take advantage of the clock face above to help them.

Question 12

This question was very well done with the majority of students being able to select the correct information from the table.

Part (a) was the least well done part with some students giving Nell, who was second oldest as the oldest person.

Part (b) was generally correct as there were less to choose from than in (a).

Part (c) was also generally correct.

Question 13

Many students gained only one mark out of two for this question on rounding the cost of one item to the nearest penny. These students got to 31.5633… or 31.5833… but either didn't know how to round and gave an answer of 31 or didn't interpret pence and gave an answer of 0.31 or 0.32 Some incorrectly divided the number of truffles by the cost and gained no marks.

Question 14

Few students gained full marks for the area of this shape made of two rectangles, with zero being the modal mark. Several added the given measurements, giving part of the perimeter while some added values for the whole perimeter. Some students who knew area involved multiplying, multiplied all the given values together.

Question 15

There has been many utility bills in the past, so this question should not have been a surprise to students. We did see a good performance from a fair number but also some students who showed little understanding of what was needed. Students who had clearly practised utility bills seemed to interpret the two figures as a starting number of units and a final number of units so subtracted to find the units used. Some added the basic rate units to the cheap rate units and multiplied this by the monthly charge or just changed the figure of amount of units to an amount in money.

A good number of students gave the answer £75.39, having forgotten to add on the monthly charge.

Section B

Question 1

In (a) students needed to recall the answer to 9 × 8 and a good number were successful. About one-fifth of the entry were incorrect, often giving an answer such as 64 or 71 showing they had some idea of what is required.

In part (b) some students just removed all the zeros from 62 000 when dividing by 100. About two-thirds of students were successful, but place value is an area that requires more work for many.

Part (c) asked students to write 704 in words and had an excellent response with only a few incorrect answers.

Question 2

This question on an estimate for the cost of 8 mugs priced at £3.85 each was done quite well but students should be reminded to see this as 8 × £4 and not to add 8 lots of £3.85 and see which answer is nearest to the one they get. C (£4.00) was the most frequently occurring wrong answer where maybe students thought they had to round £3.85

Question 3

This question needed students was testing students knowledge of metric and imperial units.

In part (a) most students were able to correctly tell us that the metric unit used to give the amount of milk in a carton was litres.

In part (b) the modal mark was zero; it seemed that students were unfamiliar with the term 'imperial unit' and we had several responses telling us centimetres for the unit to give the height of a box.

Question 4

This question involved writing decimals, percentages and amounts of money in order.

Part (a) was the least well done part as students often see 0.09 as 9 and while this was the smallest number many gave it as larger than 0.7 and 0.6
0.67 was also frequently given as bigger than 0.7

Students had a great deal of success putting the percentages in order of size in part (b).

Part (c) was done fairly well but it was not unusual for a student to think that 632p was smaller than £5.97 as it was an amount in pence and not pounds.

Question 5

For part (a) nearly all students were able to correctly measure the length of the line in cm. A very small number gained no marks for a length in mm.
Part (b) was not done as well as the first part with many students drawing an angle of 50° rather than the required 130° Some students drew an arc of a circle rather than a straight line for the angle. It was pleasing to see the majority of students drawing the angle at the point X rather than sometimes drawing the angle in the middle of the line where, unless labelled, it was impossible to tell which angle the student wanted you to mark and gaining no marks.

Question 6

Part (a) was done well with several students gaining full marks for adding the three numbers correctly. Students with just one error were able to gain one mark and this benefitted many.

Part (b) was done correctly by just over half the students sitting the examination. One mark was available for those with one multiplication error and this was frequently awarded. Some students just showed some random figures and clearly did have a good strategy for multiplying a 3 digit number by a single digit.

Part (c) was the least well done part of this question with many not appearing to know where to start when dividing.

Part (d) was also not done particularly well with some students not understanding place value and so thinking that 51 – 16.7 could become 167 − 51 or doing the sum 51.7 – 16. An answer of #.3, ie dealing correctly with the decimal value was awarded 1 mark and this benefitted several students.

Question 7

This question required students to work with some fractions given in a list in a variety of ways.

In part (a) the vast majority were able to state correctly the fraction of the shape that was shaded.

Part (b) asked for $\frac{8}{20}$ to be given in its simplest form. Some students unfortunately showed some understanding but gave the answer as $\frac{4}{10}$ and so not fully simplified.

For part (c) many were unable to write 31% as a fraction with many seemingly random answers with $\frac{1}{3}$ being popular.

For part (d) students were asked to subtract fractions and, on the whole, were often able to give the correct answer.

For part (e) students had to give the smallest fraction from the list and the two equivalent fractions from the list. The smallest fraction was often ½ presumably because this had the smallest numerator and denominator; some students did not seem to realise that 2/9 was smaller. About the same number of students were able to successfully give the two equivalent fractions as those able to give the smallest fraction, but many had little understanding of how to select the two.

Question 8

The majority of students were able to correctly give the perimeter of 22 cm. A few students were able to benefit from a method mark for a correct calculation with an arithmetic slip but for those who put something such as 23 cm with no working, no marks were awarded. The most common error was to give the answer as 28 which was found by multiplying the length and width, i.e. an area calculation.

Question 9

Most students were able to use the number line to order the given list of numbers in part (a).

The vast majority of students were able to use the number line to work out both of the calculations involving negative numbers in part (b) and part (c). The few incorrect responses were usually one out, showing they had probably counted the number itself rather than moving on one.

Summary

Based on their performance on this paper, students are offered the following advice:

- Read questions very carefully and ensure the answer is what is asked for.

- Use the calculator when allowed to do so, i.e. on section A.

- Show all working clearly even on the calculator section.

- Learn conversions between metric units of length, weight and capacity.

- Learn the calculations needed for area, perimeter and volume, and know not to get them mixed up.

- Spend more time revising fractions and decimals and utility bills