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Principal Examiner Feedback

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Pearson Edexcel Level 2 Award in Number and Measure (ANM20) Paper 2A + 2B

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Introduction

Section A is a calculator paper. It was evident from some work that students were attempting the paper without the aid of a calculator. This is not advisable, since calculation errors will cost marks.

Students need to take particular care with their numbers. Some figures written by students were either ambiguous or illegible. Equally it was not uncommon to see students mis-copying answers from working space onto answer lines.

Generally the standard of work on this paper was encouraging, but there were too many cases where students failed to show their working out. On these occasions an incorrect answer would lead to the loss of all marks for that question.

The design of this paper and the performance of students on this paper were consistent with previous papers so allowing a pass mark of about 66% of the total mark to be considered as showing proficiency in Number and Measure at Level 2.

Reports on Individual Questions

Section A

Question 1

A question that was answered well. Students must clearly show their decimal points, some are very faint.

Question 2

There were some confused methods here. Some students attempted to write multiples of the ratio in an attempt to get to the desired one, but rarely got there. The most common error was to give the counters for all three rather than just for Charlie.

Question 3

A well answered question.

Question 4

The first three parts were usually answered well with just the predictable incorrect answers of 16 in (b) and 2.77 in (c). In part (d) it was not unusual to see $10+24$, but the most common incorrect approach was shown as $25+144=149$

Question 5

Recall of the correct formula for finding the circumference of a circle proved an insurmountable obstacle to many.

Question 6

Most were able to write the figures in the form of the ratio $12:30$, but many were unable to write this ratio in its simplest form, many being left as $6:15$.

Question 7

A well answered question, with few choosing to divide rather than multiply.

Question 8

Students who found 15% of 80 in a single step usually gained the mark for the 12 seen. Some unfortunately then added this to 80 rather than subtracting. Many students used a staged approach of finding 15%, which was unnecessary on a calculator paper. Frequently this was not successful, since sometimes they found 10%, 5%, but were unable to process the figures correctly; addition errors were too frequent. Centres are advised to discourage a staged approach when a calculator is available.

Question 9

Students used a variety of methods in working towards the answer. Many incorrectly assumed this was a question about factors, and merely listed the factors of each number. Some credit was given to those who drew factors trees, where these led to listing prime factors, since these could then lead to the answer. Unfortunately this was rare, since once the prime factors had been found for each number, students did not know how to use this information to find the lowest common multiple. By far the most successful method was simply listing the multiples, an easy task given they had calculators, which usually led to the correct answer.

Question 10

This was not well answered, with too many processes demonstrating error. Some merely added the lengths or appeared to want to find the surface area. The most common error was a failure to halve at some stage, either for the triangle, or for the cuboid.

Question 11

A significant minority of students incorrectly applied a compound interest approach to this question, which is surprising since compound interest is not on this specification. There was some confusion in using the 4 and the 5.7, with working not always clear. But those who calculated 4×5.7 or $4\times$the interest for one year, usually went on to state the correct final answer. As with Question 8 there were too many staged approaches in trying to find percentages.

Question 12

Most students understood that it was necessary to divide this shape up in some way, and showed this on the diagram by either dividing up the given shape into a combination of rectangles and triangles/trapezium, or by adding a triangle to make a rectangle. Having done this, students unfortunately then failed to consider the individual shapes that they then had. Finding the resulting dimensions caused the most problem, though some merely showed $10\times12+18\times5$ which showed no understanding of the problem.

Question 13

It was encouraging to see many correct pie charts. Some calculated the correct angles to be drawn but then drew a completely inaccurate pie chart, suggesting they might not have had a protractor with them. Many who did not know how to calculate the angles merely guessed the approximate proportions, which usually failed to attract any credit. Most used labels on their pie chart. Accuracy in calculating the angles was an issue for some. Rather than calculate the angle in one step, many worked out the scaling factor first by working out $400\div360$, but then rounded this to 1. Students would be better advised to perform the calculations in one step or to use accurate factors.

Some ignored calculation of the angles and just tried drawing with angles of 160 and 110, ignoring the fact that the third angle was then incorrect.

Question 14

Most students used a formal approach with these fractions with only a minority choosing to convert to decimals, even though they had a calculator. Most gave the correct answer in a variety of forms. It was clear students tried to use the fraction function button on their calculator but did not understand how to use it with mixed numbers; the answer of 4 was very common.

Question 15

This was a well answered question. The most common failing was poor arithmetic or mis-copying of digits, in transferring numbers from one stage of the calculation to the next. A minority subtracted £43.30 from each subtotal.

Question 16

Most realised they had to work with the number 1440, but only a minority understood how to do this to form a percentage. The insistence of building up or trial and error to find the percentage was very common.

Question 17

It was encouraging to find that more students than is usually the case remembered the formula for finding the area of a circle. But beyond that, only the better students made any headway. Use of the diameter instead of the radius, failure to halve at some stage and the misuse of the number 4 were all mistakes that students frequently made in their working.

Section B

Question 1

Part (a) was well answered. In the other parts the only error was usually in the sign.

Question 2

Performance on this question appeared weaker than is usual. In part (a) most students abandoned a traditional approach, involving decomposition, in favour of adding numbers on to get to 2000; an acceptable approach as long as their arithmetic does not fail them and they remember to add together all parts of this process. In part (b) it was not uncomstudentmon to see all the numbers added, though poor work with place value failed many, with the 308 being placed under the 54.76 irrespective of the decimal point.

Question 3

Students who tried multiplication of 12 before a division of 7 found this harder to answer. An alternative method of dividing by 7, and then adding on to £2.10 to find 12 was done badly, either because of poor arithmetic or because more or less than 5 was added.

Question 4

Performance on this question appeared weaker than is usual. Grid methods were the most popular, though poor multiplication failed many. Part (b) was done better, though too many divided 38 by 6 and then stated the remainder as 3, spoiling the rest of their calculation. Those who obtained the correct digits were usually able to place the decimal point correctly.

Question 5

This was a well answered question.

Question 6

In part (a) most students were able to write the numbers correctly as a fraction with $\frac{35}{50}$ usually seen. Some then had difficulty in writing this in its simplest form. Finding fractions of quantities is clearly a weakness, since many students were unable to process this procedure correctly. Working demonstrated that finding 67.5 was no more difficult than finding 64, given the correct process. Only a few failed to give a correct conclusion, though the mark could only be awarded if they showed clearly the two figures that they were comparing to get the answer.

Question 7

Most students were able to round at least two of the numbers ready for calculation and, indeed, many then went on to carry out a process of calculation, usually 8×30 or 10×30. Few realised that division by 0.5 resulted in doubling; most halved to give 120.

Question 8

Conversion to improper (top heavy) fractions in part (a) made the calculation more difficult. This was also the case when it came to converting back to mixed numbers. It was the process here that caused more problem for students than the arithmetic, since the numbers were small. Part (b) was better answered than part (a) with many correct answers.

Summary

- Having the correct equipment for the examination such as a calculator for Section A and a protractor for pie charts.
- Writing clearly and showing working.
- Knowing the formulae for the circumference and the area of a circle.
- Simplifying ratios.
- Calculating percentages in a single step when using a calculator.
- Calculating a fraction of a quantity.
- Expressing a number as a percentage of another number

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:
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