Examiners' Report
Principal Examiner Feedback

Summer 2022

Pearson Edexcel Awards
In Number and Measure Level 2 (ANM20)
Paper 2A

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Edexcel Award in Number and Measure (ANM20)
Principal Examiner Feedback – Level 2

General Comments

Section A is designed to be completed with the aid of a calculator, but the sight of a significant number of non-calculator methods would suggest that not all candidates had a calculator. For example, this was apparent in question 8 where long multiplication methods were seen.

There were far fewer attempts that resembled trial and improvement approaches, but the inclusion of any working out to support answers remains an issue for some. Candidates also need to be reminded about how they write their numbers. There were examples where numbers were written ambiguously (eg 1s and 7s, 2s and 5s) or numbers over-written, leaving them illegible. But a significant issue in this series was the misreading and miswriting of numbers. On too many occasions candidates miscopied numbers from the question, or even their own figures.

There were some instances in this paper where working out was set out in such a disorganised way that it was almost impossible to identify a chosen route of solution by the candidate, in order to award method marks. In particular, questions 9, 17 and 18 in Section A required several different stages or working. Also in Section A some candidates used a number of stages to answer Questions 14 and 16, with question 11 in Section B frequently done using partitioning methods. That said, there was an improvement this series in the way that candidates set out their work, even when compared with 2019.

There were a few occasions where several methods were shown by a candidate; unless made clear by the candidate which is to be accepted for marking, no marks can be given.

It was encouraging to find that most candidates attempted nearly every question, in both sections.

Report on Individual Questions.

SECTION A

Question 1.
There were many correct answers to this question. The most common error in either part was mis-counting the divisions whilst in part (b) it was not uncommon to find candidates counting the wrong way, for example giving answers such as 33.9

Question 2.
When errors were made in this question, these errors were normally associated with the choice of the wrong sign, though times table errors again caused problems for some in part (a). Although the drawing of number lines might have assisted candidates, there was no evidence of this method being used.

Question 3.
This was a well answered question. Part (a) was done best, with many correct answers. In part (b) some showed a lack of understanding by multiplying by 3. In part (c) a few added the indexed numbers or used 10 or 8. There was some evidence that candidates failed to understand how to use their calculator or were using a calculator without a square root facility.

Question 4.
A minority incorrectly chose to multiply rather than divide, but having chosen to divide, then most of the candidates went on to give the correct answer.

Question 5.
A small number of candidates divided by 21 in an attempt to find the percentage. Otherwise many understood to multiply by 21 and divide by 100. Many used non-calculator partitioning methods, finding 10% and 1%, but then had difficulty in adding 420+420+42. Essentially non-calculator partitioning methods were far less successful than those who simply used a method equivalent to ×0.21

Question 6.
There was some confusion between adding and multiplying the given figures, and some who used 7203. But this was usually well answered. There were some trial and improvement methods but they did not have to perform many trials before arriving at the answer 15. It was disappointing to find that the majority of candidates failed to give any units with their numerical answer, thereby losing a mark.

Question 7.
A well answered question. Most candidates obtained the correct answer. The most common error was in just multiplying the three numbers given, or spoiling a correct multiplication method by also dividing by 2.

Question 8.
Many candidates obtained the correct answer. The only error appeared to be when candidates rounded or truncated a figure on their calculator, or mis-copied the number. It was disappointing to find a significant minority attempting this question using long multiplication methods, suggesting they did not have a calculator.

Question 9.
Although this was a long question it was usually very well done, with evidence of sound arithmetic in most cases. A minority showed evidence of transcription errors in working.

Question 10.
A minority incorrectly chose to divide rather than multiply, but having chosen to multiply, then most of the candidates went on to give the correct answer. This was better done than question 4, but those without a calculator were unable to do the long multiplication they attempted.

Question 11.
The majority of candidates attempted this by a traditional approach, writing these as improper fractions. The weakest candidates tried to do this using only 1/2 and 1/5. A significant minority did 5/2 × 5/2 to get 0 marks. There was no requirement to simplify fractions after processing. Of those candidates who changed the fractions into decimals to use a calculator, most then went on to give the correct answer.

Question 12.
Some tried to list many multiples of 25 and 80, but this was the surest way to gain full marks as long as they went far enough. Many used factor trees, gaining some credit for showing the prime factors. Venn diagrams were almost a s popular as tree diagrams for showing the prime factors. Some then went on to successfully state the LCM, but most using this method did not know how to use their prime factors to arrive at the answer. Some thought they were trying to find the HCF and listed pairs of factors.

Question 13.
Candidates who could not work with percentages were unable to make much progress with this question. Sometimes, in trying to work out the percentage, the division by 100 was not done. Fewer candidates than in previous series attempted this question using compound interest methods, but there remained some confusion as to whether to give their interest as the final answer, or whether to add their answer back onto the 45 200. Too many used a partitioning method to find the percentage by attempting to find 1% and 0.5% rather than a more direct approach, usually leading to greater error. It was not uncommon to find candidates who used this approach finding 10%, 1% and then not knowing how to get to 1.5%.

Question 14.
There was the usual confusion of candidates over whether to use 8 or 16 in any circle formula, and of course a minority of candidates who tried to use the formula for working out the area of a circle, but this was less common than in previous series. Common errors included a failure to divide by 2 to find the perimeter of the semicircle rather than the whole circle, and a failure to add on the length of the base of 16 as the final step. The majority failed to attempt the question or just gave 16 as the answer.

Question 15.
Most gained some credit for the first step of showing 3296, but could not then convert this to a percentage of 16. Increasingly common was a first step of finding 23896 ÷ 20600 (a common error to state the inverse of this) though many then failed to realise this led to the answer of 16, instead giving 1.16 or 0.16 as their final answer.

Question 16.
This question was quite well answered. Though the majority found the sum of their products, it was not uncommon to see errors due to an addition of the values in the first or second columns of the table.

Question 17.
A significant minority confused perimeter with area and worked out 4 × 10. But a mark for working out 10 × 10 was common. Unfortunately, the majority failed to progress any further due to much misunderstanding about working out the area of the circle. Many could not remember, and others guessed a variety of formula including 2×π×3, π2×3, and (π×3)2, some using the diameter rather than the radius. It was disappointing to find some candidates adding the areas, rather than finding the difference. Overall a question that was not well done.

Question 18.
Most candidates showed understanding of rectangular area by showing how to work out an appropriate area from having divided the end into a rectangle and a triangle. A mark could also be given for 5 × 12 when it was clear that the candidate had added a triangle to make the rectangle whose area is being found, but this mark was not given when there was no evidence of work with compound shapes, as many candidates were just taking the figures 12 and 5 and multiplying. Many weaker candidates failed to divide by 2 in finding the area of their triangle or misjudged the dimensions of the missing internal length (usually giving 4 again, instead of 5). It was not uncommon to find figures just multiplied or added at random. Many gained a mark in part (ii) for multiplying their answer in (i) by 9, irrespective of the value of their answer from (i).

Concluding guidance notes for centres:

1. Candidates need to ensure they arrive to take the examination with all necessary equipment, which includes a calculator for Section A.

2. Figures need to be written clearly, and not over-written.

3. Candidates need to ensure they copy figures accurately, either from the question, from their calculator, or from their own working.

4. Working needs to be presented legibly and in an organised way on the page, sufficient that the order of the process of solution is clear.

5. Basic numeracy such as addition/subtraction needs practice.

6. Times tables need to be learned.

7. Candidates need to spend more time ensuring they read the fine detail of the question to avoid giving answers that do not answer the question, and to give answers in the form required, such as simplified if asked for.

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