Pearson Edexcel

Examiners' Report
Principal Examiner Feedback

January 2021

Pearson Edexcel Awards
In Number and Measure Level 2 (ANM20_2A)

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Introduction

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.

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 11 and 16 in Section A required several different stages or working. Also in Section A some candidates used a number of stages to answer Questions 14, with question 5 in Section B frequently done using partitioning methods. There was no significant improvement this series in the way that candidates set out their work, compared with previous series.

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.

There were too many attempts that resembled trial and improvement approaches, but the inclusion of any working out to support answers remains an issue for many. Candidates also need to be reminded about how they write their numbers. There are an increasing number of occasions when numbers are written ambiguously (eg 1s and 7s, 2s and 5s) or numbers are over-written, leaving them illegible.

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

SECTION A

Question 1.
There were many correct answers to this question. The most common error in either part was mis-counting the divisions. In either part it was not uncommon to find candidates counting the wrong way, for example giving an answer such as 23.3 in part (a), or ignoring scaling by giving an answer of 83.2 in part (b).

Question 2.
This was a well answered question. In part (a) some showed a lack of understanding by multiplying by 3. Part (b) was done best, with many correct answers. In part (c) a few added the indexed numbers or used 40 and 48. 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 3.
One error was in multiplying 75 by 6, or using the 8 (sides) by attempting to divide into or multiply the 75. Some candidates were confused by the units (cm3) and felt the need to multiply the 75 by 3, or find 753 as part of the process. Some divided their final answer by 8.

Question 4.
When errors were made in this question, these errors were normally associated with the choice of the wrong sign, but this was a well answered question.

Question 5.
A minority incorrectly chose to divide rather than multiply, but for those who chose to multiply, most went on to give the correct answer. Those without a calculator were unable to do the long multiplication they attempted.

Question 6.
In part (a) it was not uncommon to find answers being rounded to something other than 2 decimal places or truncated to 2 decimal places.
In part (b) candidates need to understand that whenever calculations are required in this section, they must be worked out accurately. With a calculator this was a relatively easy question, yet some candidates spoilt their answer by truncating or rounding unnecessarily.

Question 7.
A well answered question. Many candidates obtained the correct answers with more success in part (a) than part (b). The most common error was in just multiplying the three numbers given. The division by 2 was not well understood, with some dividing by 2 in part (a), or failing to do in part (b). 2040 was a very common incorrect answer in part (b). There was clearly some confusion between perimeter and area.

Question 8.
A minority incorrectly chose to multiply rather than divide, but those candidate show chose to divide, most went on to give the correct answer.

Question 9.
The majority of candidates attempted this by a traditional approach, writing these as improper fractions. The weakest candidates tried to do this using only 1/4 and 1/2. 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 10.
A significant minority of candidates divided by 12 in an attempt to find the percentage. Otherwise many understood to multiply by 12 and divide by 100. Some used non-calculator partitioning methods, finding 10%, and 2%, but failed to add their 140 and 28, or used just one of them as an answer; such partitioning methods were rarely complete. Essentially non-calculator partitioning methods were far less successful than those who simply used a method equivalent to ×0.12 Few got 1%=14 with this usually given as 1.4 or 0.14

Question 11.
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. It was disappointing to find a significant minority of candidates getting the operation wrong, but adding on the tax, or just ignoring it completely. Some worked in pence for the small flowers, pounds for the large flowers, but then just added their figures without using the same monetary units.

Question 12.
There was the usual confusion of candidates over whether to use 5.5 or 11 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. Other common errors included a failure to divide by 2 (for a semicircle) or not adding on the straight edge of 11 cm in finding the total perimeter.

Question 13.
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 14.
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. There were always those candidates who attempted this question using compound interest methods, and there remained some confusion as to whether to give their interest as the final answer, or whether to

add their answer back onto the 2000. Too many used a partitioning method to find the percentage by finding 1% the 0.5%, rather than a more direct approach, usually leading to greater error. It was also a surprise to find many spoiling their solution by multiplying both the 2000 AND the 1.5 by 2 (years), typically arriving at an answer of 120.

Question 15.
There were many attempts using factors, which gained no marks. The most successful attempts were those who listed multiples, frequently arriving at the correct answer. Those who used factor trees gained some credit for showing the prime factors, but most using this method did not know how to use their prime factors to arrive at the answer; the same was the case for those few candidates who used a Venn diagram.

Question 16.
This question was surprisingly poorly done. Too many attempted a perimeter calculation, typically giving 84 as their answer. Many started by calculating 20 × 22 with some also showing 7 × 16, but having worked out 440 and 112 there was frequently confusion as to what to do with these figures, with some adding them. A significant minority simple did 20 × 22 and gave 440 as their answer.

Question 17.
Most gained some credit for the first step of showing 129, but could not then convert this to a percentage of 12. Some attempted to use the given figures, but it was most common to see these given incorrectly as the inverse 1075÷946.

Question 18.
Better candidates were able to recall the correct formula for working out the volume, but π × r × h was a common misconception. The numbers here were the exact numbers for substitution, so there was less opportunity for error, though some still tried to use 14 for substitution. Without a calculator obtaining the final answer was impossible, and a small number failed to process the figures correctly on their calculator, but usually correct recall of the formula then led to the correct answer being given. It was disappointing that the majority of candidates failed to use π at all, just doing 7 × 13 or 14 × 13.

Concluding guidance notes for centres:

1. Basic numeracy such as addition/subtraction needs practice, whilst times tables need to be learned.
2. Candidates need to ensure they arrive to take the examination with all necessary equipment, which includes a calculator for Section A.
3. Figures need to be written clearly, and not over-written.
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. 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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