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Principal Examiner Feedback

November 2011

GCSE Mathematics (5MB2F)
Paper 01 (Non-Calculator)

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1. PRINCIPAL EXAMINER'S REPORT – FOUNDATION PAPER 01

1.1. GENERAL COMMENTS

1.1.1. It was disappointing to see poor responses to questions where a working was asked for or for where a reason for an answer was required. This was particularly the case in question 7 and 17 the geometric explanation questions.

1.1.2. A significant number of marks were lost where candidates failed to show working and only wrote incorrect answers on the line.

1.1.3. Questions 1 – 3, 5 & 6, 10, 11a were tackled with the most success.

1.1.4. Questions 4, 7 – 9, 13d, 14 – 17 were less successfully completed.

1.2. REPORT ON INDIVIDUAL QUESTIONS

1.2.1. Question 1

Part (a) of this question was not very well understood and not very well answered with 33% of candidates gaining the mark for correctly writing the name of the quadrilateral as rhombus though candidates writing parallelogram were also awarded the mark.

In part (b) a much higher percentage, 72% of candidates were able to draw in the two lines of symmetry for the shape.

1.2.2. Question 2

This question was well understood with part (a) being answered correctly by 83% of candidates.

Part (b) was slightly less successful with 5600 and 56 being common wrong answers; 65% did however write the correct answer of 560.

Part (c) too was very well answered with correct answers given by 96% of candidates.

It was in part (d) where candidates made errors 55% were able to write 49 for the square of 7 and 52% gave a correct answer of 8 for 2^3 with 6 being a very common wrong answer.

1.2.3. Question 3

Part (a) was well understood and well answered with 87% of candidates giving the correct length of the line *PQ.*

However part (b) was only answered correctly by 46% of candidates as many misread the question and marked the point 5 cm from *P* rather than from Q.
In part (c) 68% of candidates scored 1 mark for writing obtuse for the type of angle and a further 63% gained the mark for giving the angle as 120º though the most common wrong answer was 60º.

1.2.4. Question 4

Only 37% of candidates were able to give the correct answer to this question with candidates making many errors along the way. Some candidates used double the travel costs as they thought the travel cost were for one way only and this was condoned for full marks. Some candidates did not multiply the room cost by 7 and used a different number e.g. 2 or 3 (the number of adults and children) whilst other candidates missed some of the components for the total and others did not find the amount left from the £1500. A significant proportion of candidates (32%) did gain 3 marks usually for making a slip at an early stage of their calculations whilst 10% gained 2 marks for adding the 4 required components and 17% gained one mark for obtaining a correct answer to one component. Only 4% of candidates did not score any marks.

1.2.5. Question 5

This question was well answered with 75% of candidates being able to write the minimum night temperature and 67% the day with the biggest difference but then 75% of candidates could give the correct answer for their chosen day as this was followed through from their incorrect day.

1.2.6. Question 6

This question was very well understood with 72% gaining the mark for the weight of the parcel, the most common mistake was to write 5.3 kg.

In part (b) 71% of candidates gave the correct answer of £9.58 but some candidates mistook the information in the table and tried to find the cost on a linear scale whilst others added all the costs up to 6kg.

1.2.7. Question 7

A straightforward question but 36% of candidates did not score any marks and then only 30% were able to write down that the angles in a straight line add up to 180º

1.2.8. Question 8

This starred question was not well answered by many candidates with only 9% gaining all three marks. Some candidates (19%) were able to understand that 5 calculators cost the same as 4 and then a further 18% were able to work out the total cost of £138. Very few candidates were then able to give the reason that £138 was the cost for 28 calculators and this was less than £140 or that there was £2 change.

1.2.9. Question 9

This question tested candidates understanding of finding percentages, finding a fraction of an amount and writing a ratio in its simplest form and candidates showed that they could cope with the finding 15% of 240 best (43%) followed by finding a third of 240 (40%) and writing a ratio in its simplest form was only fully correctly answered by 31% though 29% gained one mark for an incomplete solution.

1.2.10. Question 10

This question was again well understood and 74% of candidates were correctly able to read information from the graph when it was a straight forward scale but in part (b) reading off the scale when one small square was 0.2 mph was only understood by 35%.

Part (c) was reasonably well understood as 54% of candidates were able to relate the two amounts and correctly select the faster and give a correct method

1.2.11. Question 11

This question on number patterns was well answered with most candidates finding that Pattern number 6 was the one with 14 circles though some candidates did find the answer for Pattern number 14. The candidates that were able to establish that they understood that the pattern was growing in 2's were able to score 1 mark.

In part (b) there were a variety of solutions ranging from the elegant, finding the nth term and using it to find the number of circles when $n = 50$ to the those candidates that drew Pattern number 50 and counted the circles together with those that went up in 2's from 4 to 102. All 4 marks were awarded to 20% of the candidates and 53% gained 2 marks for a partial solution to the whole question.

1.2.12. Question 12

A standard manipulative algebraic question where 73% of candidates gained 2 marks and 14% gained 1 mark for writing $4x$ or $9y$.

1.2.13. Question 13

Parts (a), (b) and (c) were all about negative numbers and order of operations, a topic that foundation candidates often struggle with and this was no exception.

In part (a) only 24% of candidates were able to correctly give the answer as 17 with 2 being the most common wrong answer. In (b) the brackets were correctly placed by 47% of candidates and in part (c) the correct answer of 24 was only given by 30%. Part (d) was the most poorly answered part of the question, the addition of fractions, with $\frac{8}{15}$ being the most common wrong answer 26% gave the correct answer and 3% gained 1 mark for writing one of the two fractions correctly with a common denominator as long as that fraction was not $\frac{7}{10}$ (as this was part of the question). Not many candidates used the cell method, but when they did, the cells were generally correct.

1.2.14. Question 14

This question tested whether candidates could substitute correctly into a formula with squares in it and it turned out that many could not as 48 was a common wrong answer. Candidates that did give 48 as their answer were awarded 1 mark if they gave the correct conclusion. 12% did manage to write down the substitution correctly and a further 7% gave the correct answer of 24 but only 29% of candidates managed the fully correct solution with the correct conclusion.

1.2.15. Question 15

This question, due its algebraic nature was poorly attempted and only 2% of candidates were able to gain all 3 marks for the perimeter with 3% gaining 2 marks for attempting to add 5 or 6 correct lengths and 1 mark was gained by the 9% of candidates who found one missing length correctly.

In part (b) it was only 3% of candidates who could divide their answer to part(a) correctly by 4. In the whole question 83% of candidates scored no marks.

1.2.16. Question 16

Many candidates understood the concept behind this question but were unable to carry out the calculation correctly. The most successful candidates were those that did $(12^2 – 8^2) \div 4$ followed by those that used the area of a trapezium formula and wrote $\frac{1}{2}$ (12 + 8) × 2, a few candidates realised that all the card could be replaced by four rectangles two of 8 by 2 and two of 12 by 2. Full marks were gained by 3% of candidates, 3 by 0.4%, 2 by 4% and 1 mark was awarded to the 12% of candidates that found one area correctly. A significant number of candidates confused perimeter with area and scored no marks.

1.2.17. Question 17

A surprising number of candidates (9%) scored one mark in this question, either for correctly calculating the missing angles in the isosceles triangle *ABC* or for finding the alternate angle *CAE*. Two marks were obtained for obtaining both angles and this was achieved by 4% of candidates. The 10% of candidates that found the missing angle *x* scored 3 marks but only 0.6% of candidates could state the reasons correctly. Few candidates use the three letter notation to identify angles. Some candidates used Z angles in their explanation which is no longer acceptable for alternate angles.

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