

Principal Examiner Feedback

June 2011

GCSE Mathematics (2381)

Foundation Paper (5381F/05)

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1. PRINCIPAL EXAMINER'S REPORT – FOUNDATION PAPER 5

1.1. GENERAL COMMENTS

- 1.1.1. Candidates appeared to be able to complete the paper in the allotted time.
- 1.1.2. Candidates need to be made aware that probability needs to be written as a fraction, decimal or percentage. There are still many candidates writing probability in an incorrect form such as ratios, x in y , x out of y etc.
- 1.1.3. Candidates need to ensure they answer each part of the question. A surprising number of candidates left out plotting the information from the table in the scatter diagram question (B3(a))

1.2. REPORT ON INDIVIDUAL QUESTIONS

1.2.1. Question A1

Parts (a) and (b) were well answered with over 83% scoring the mark in (a) and over 94% scoring the mark in (b).

In part (c) only 45% scored both marks. 3% scored 1 mark for identifying 2.4 and 3.5 and then stopping at $2.4 - 3.5$. The most common error, once 2.4 and 3.5 were identified, was to add the two values and then generally divide their answer by 2. This method is totally incorrect and no marks could be scored.

In part (d) over 47% could provide the correct answer. Of the 41% who scored one mark, nearly all went for £589.89 not realizing that the processor speed had to be **greater** than 2.0 GHz

1.2.2. Question A2

Nearly 63% of candidates scored all 3 available marks. Most of the rest managed to get at least 1 entry correct with only 8% failing to score. The most common error was to add the column totals and the row totals together reaching a grand total of 364 rather than 182.

1.2.3. Question A3

It was pleasing to note that nearly 60% of the candidates answered this correctly. By far the most common incorrect response was 0.25 as candidates looked for a pattern in the numbers in the table. Others added the 3 values given in the table but then failed to subtract this from 1, scoring no marks. Nearly 40% of the candidates failed to score.

1.2.4. Question A4

It was disappointing to find that over 75% of the candidates failed to score on this question. Of those that did score, many realized they had to multiply the mid-value by the frequency. However, some then ignored this and added the original frequencies and divided by 4 reaching an answer of 7.5. This scored no marks as the correct starter was not used. Most candidates who attempted to multiply the frequencies by a value in the interval did use the mid interval but it was not uncommon to see them all multiplied correctly apart from the first where $f \times x$ was written as 15. Only 15% of candidates scored all 4 marks.

1.2.5. Question B1

Candidates coped well with the stick figures with over 90% of the candidates scoring all 4 marks. In the last two parts many were inventive and used part stick men in different ways eg $24 = 4$ complete men and 2×2 men or even 6×4 men. Where it was done correctly all available marks were awarded. A few were careless in their use of symbols missing arms instead of legs and a few just drew 15 or 24 men ignoring the key.

1.2.6. Question B2

Over 95% of candidates were successful in both parts (a) and (b).

Part (c) was well answered with over 61% scoring both marks. Many of the 14% who scored one mark tended to get the correct 4 and 14 (or equivalent) but used the incorrect notation such as $4 : 14$, 4 in 14, 4 out of 14, etc. Others were able to score 1 mark by either writing the 4 or the 14 as part of a fraction.

In part (d) over $\frac{3}{4}$ of the candidates recognised that blue and green both ended up with 5 cards or realised that green had to have 3 extra cards to be the most likely colour of card to be taken.

1.2.7. Question B3

In part (a) it was extremely disappointing to see how many candidates did not plot either of the points, leaving this part blank, even though they then went on to answer the rest of the question. There were also many who plotted (50, 75) incorrectly as they were not able to interpret the scales.

Part (b), on the whole, was well answered. The most common error (which scored no marks) was just to write the word 'positive'. If candidates want to look at the type of correlation only they do need to write 'positive correlation' to score the mark.

Most candidates who attempted to draw a line of best fit drew it within the required region. However there were quite a few candidates who merely joined up all the points with a zigzag line.

Part (d) was well answered with many getting an answer within the given range or correctly following through from their line of best fit. However

many candidates used their line of best fit to estimate the number of umbrellas sold when the rainfall was 80 mm.

Overall, about $\frac{1}{4}$ of the candidates scored all 4 marks, 30% scored 3 of the 4 marks and 9% failed to score.

There was a very mixed response to part (c). Those candidates who showed in their work that they needed to multiply both the numerators and both the denominators were able to gain the method mark even though poor arithmetic in later work precluded them from the accuracy mark. A common incorrect answer here was $\frac{12}{32}$ which was often given without working. A significant number of candidates were unable to cancel $\frac{12}{40}$ to $\frac{3}{10}$. Common errors here were in cancelling $\frac{3}{10}$ to $\frac{1}{5}$ or $\frac{2}{5}$. Only a handful of candidates were able to successfully cancel the fractions before multiplying them. It should be noted that a significant number of candidates treated this question as an addition problem.

1.2.8. Question B4

86% of the candidates gained full marks. Some were overly excited and did the reverse of each as well, losing a mark. Candidates need to organise the way they write the combinations as some lost marks by missing one out as they wrote their answers in an unsystematic way.

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