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# Mark Scheme (Results)

## November 2009

GCSE

## GCSE Mathematics (Modular) - 2381
## Paper: 5381H/ 6B

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**5381H/6B**

| Question | Working | Answer | Mark | Notes |
|---|---|---|---|---|
| 1 | <table><tr><th></th><th>Tally</th><th>Frequency</th></tr><tr><td>Girls</td><td></td><td></td></tr><tr><td>Boys</td><td></td><td></td></tr><tr><td>Men</td><td></td><td></td></tr><tr><td>Women</td><td></td><td></td></tr></table> | Data collection sheet | 2 | M1 for a chart quoting all 4 cases (men, women, boys, girls) with spaces in which tally marks or equivalent could be recorded.<br>[Do not accept - graphs unless it is clear how it is to be used to collect data.<br>- questions from a questionnaire]<br><br>A1 for an indication of tallying (oe), either by example or heading AND a column or indication of frequency (totalling)<br>Ignore extra information that may be given on the collection sheet.<br>[SC: B1 for a tally column and a frequency column if M0 scored]<br>Note: Use of the 3 cases; 'men', 'women', 'boys & girls' is acceptable throughout |
| 2 (a) | | **(1,1)**(1,2) (1,3)(2,1) (2,2)(2,3) (3,1)(3,2) (3,3) | 2 | M1 at least 6 outcomes, including the (1, 1) given. [ignore repeated outcomes]<br>A1 all correct |
| (b) | | There are 3 outcomes whose sum is 4; (1,3), (2,2)and (3,1)<br>so $\frac{3}{9}=\frac{1}{3}$ | 2 | M1 for stating that there are 3 cases whose sum is 4<br>A1 for sight of $\frac{3}{9}=\frac{1}{3}$ |

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|---|---|---|---|---|
| **Question** | **Working** | **Answer** | **Mark** | **Notes** |
| 3 (a) | $\frac{420+380+240+320}{4}$ | Complete and correct calculation | 1 | B1 for $\frac{420+380+240+320}{4}$ oe (= 340) |
| (b) | | Trend line | 1 | B1 for trend line drawn passing through at least two moving average points.<br>[Note: If more than one graph drawn, treat as choice and award B0 unless the correct trend line is labelled] |
| (c) | | Falling rainfall | 1 | B1 for decrease (in rainfall), downward trend , oe,<br>[Note: **negative** trend / correlation gets no marks]<br>Allow an answer of 'constant' rainfall, oe if answer to part (b) is a horizontal line passing through at least one moving average point. |
| (d) | | High in spring, less in summer and/ or in autumn | 1 | B1 oe<br>[Note: Explanation must relate to a comparison of rainfall during the seasons and not to the positions of the plotted points. At least two different seasons must be quoted] |
| 4 | $\frac{40}{100}\times 30 = 12$ | 12 | 2 | M1 $\frac{40}{100}\times 30$ oe<br>A1 cao |

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|---|---|---|---|---|
| **Question** | **Working** | **Answer** | **Mark** | **Notes** |
| 5 | $1-\left(\frac{1}{4}\right)^3-3\times\left(\frac{3}{4}\right)\times\left(\frac{1}{4}\right)^2$<br>**or**<br>$3\times\left(\frac{3}{4}\right)^2\times\left(\frac{1}{4}\right)+\left(\frac{3}{4}\right)^3$ | $\frac{54}{64}$ | 3 | M1 $1-\left(\frac{1}{4}\right)^3-a\times\left(\frac{3}{4}\right)\times\left(\frac{1}{4}\right)^2$<br>M1 $1-\left(\frac{1}{4}\right)^3-3\times\left(\frac{3}{4}\right)\times\left(\frac{1}{4}\right)^2$<br>A1 $\frac{54}{64}$<br>**or**<br>M1 $a\times\left(\frac{3}{4}\right)^2\times\left(\frac{1}{4}\right)^1+b\times\left(\frac{3}{4}\right)^3$, allow *a* or *b* to be zero<br>M1 $3\times\left(\frac{3}{4}\right)^2\times\left(\frac{1}{4}\right)^1+\left(\frac{3}{4}\right)^3$<br>A1 $\frac{54}{64}$ |

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