Mark Scheme (Results)

November 2009

GCSE

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

Edexcel is one of the leading examining and awarding bodies in the UK and throughout the world. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers.

Through a network of UK and overseas offices, Edexcel's centres receive the support they need to help them deliver their education and training programmes to learners.

For further information, please call our GCE line on 0844 576 0025, our GCSE team on 0844 576 0027, or visit our website at www.edexcel.com.

5381H/6B				
Question	Working	Answer	Mark	Notes
1	<table><tr><td></td><td>Tally</td><td>Frequency</td></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. [Do not accept - graphs unless it is clear how it is to be used to collect data. - questions from a questionnaire] A1 for an indication of tallying (oe), either by example or heading AND a column or indication of frequency (totalling) Ignore extra information that may be given on the collection sheet. [SC: B1 for a tally column and a frequency column if M0 scored] 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] A1 all correct
(b)		There are 3 outcomes whose sum is 4; (1,3), (2,2)and (3,1) so $\dfrac{3}{9} = \dfrac{1}{3}$	2	M1 for stating that there are 3 cases whose sum is 4 A1 for sight of $\dfrac{3}{9} = \dfrac{1}{3}$

5381H/6B				
Question	Working	Answer	Mark	Notes
3 (a)	$\dfrac{420 + 380 + 240 + 320}{4}$	Complete and correct calculation	1	B1 for $\dfrac{420 + 380 + 240 + 320}{4}$ oe (= 340)
(b)		Trend line	1	B1 for trend line drawn passing through at least two moving average points. [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, [Note: **negative** trend /correlation gets no marks] 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 [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	$\dfrac{40}{100} \times 30 = 12$	12	2	M1 $\dfrac{40}{100} \times 30$ oe A1 cao

5381H/6B				
Question	Working	Answer	Mark	Notes
5	$1-\left(\dfrac{1}{4}\right)^{3}-3\times\left(\dfrac{3}{4}\right)\times\left(\dfrac{1}{4}\right)^{2}$ or $3\times\left(\dfrac{3}{4}\right)^{2}\times\left(\dfrac{1}{4}\right)+\left(\dfrac{3}{4}\right)^{3}$	$\dfrac{54}{64}$	3	M1 $1-\left(\dfrac{1}{4}\right)^{3}-a\times\left(\dfrac{3}{4}\right)\times\left(\dfrac{1}{4}\right)^{2}$ M1 $1-\left(\dfrac{1}{4}\right)^{3}-3\times\left(\dfrac{3}{4}\right)\times\left(\dfrac{1}{4}\right)^{2}$ A1 $\dfrac{54}{64}$ or M1 $a\times\left(\dfrac{3}{4}\right)^{2}\times\left(\dfrac{1}{4}\right)^{1}+b\times\left(\dfrac{3}{4}\right)^{3}$, allow a or b to be zero M1 $3\times\left(\dfrac{3}{4}\right)^{2}\times\left(\dfrac{1}{4}\right)^{1}+\left(\dfrac{3}{4}\right)^{3}$ A1 $\dfrac{54}{64}$

5381H_6B
0911