



Free-Standing Mathematics Qualification **Mathematics**

4983 Using Data
Mark scheme

4983
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Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this mark scheme are available from aqa.org.uk

Key to mark scheme abbreviations

M	mark is for method
m or dM	mark is dependent on one or more M marks and is for method
A	mark is dependent on M or m marks and is for accuracy
B	mark is independent of M or m marks and is for method and accuracy
E	mark is for explanation
✓ or ft or F	follow through from previous incorrect result
CAO	correct answer only
CSO	correct solution only
AWFW	anything which falls within
AWRT	anything which rounds to
ACF	any correct form
AG	answer given
SC	special case
oe	or equivalent
A2,1	2 or 1 (or 0) accuracy marks
-x EE	deduct x marks for each error
NMS	no method shown
PI	possibly implied
SCA	substantially correct approach
c	candidate
sf	significant figure(s)
dp	decimal place(s)

No Method Shown

Where the question specifically requires a particular method to be used, we must usually see evidence of use of this method for any marks to be awarded.

Where the answer can be reasonably obtained without showing working and it is very unlikely that the correct answer can be obtained by using an incorrect method, we must award **full marks**. However, the obvious penalty to candidates showing no working is that incorrect answers, however close, earn **no marks**.

Where a question asks the candidate to state or write down a result, no method need be shown for full marks.

Where the permitted calculator has functions which reasonably allow the solution of the question directly, the correct answer without working earns **full marks**, unless it is given to less than the degree of accuracy accepted in the mark scheme, when it gains **no marks**.

Otherwise we require evidence of a correct method for any marks to be awarded.

Question	Solution	Mark	Total	Comment
1(a)	67	B1	1	
1(b)	Knit and Make gravy and Make jam and Make pastry	B2	2	B1 for one error or omission or for all 4 correct with no more than one incorrect
1(c)	48 : 84	M1	2	4 to 7 or any correct ratio unsimplified eg 8 : 14, 1 : 1.75
	4 : 7	A1		SC1 24 : 46 and 12 : 23 52 : 88 and 13 : 22 7 : 4
	Total		5	

Question	Solution	Mark	Total	Comment
2(a)	Thinking About It Only Makes It Worse and The Black Echo	B1	1	Accept 5 & 6 or David Mitchell & Michael Connelly Do not accept if any wrong answers are also given
2(b)	$1 + 1 + 3 + 4 + 1 + 4 + 1 + 2 + 4 + 4$	M1	2	Allow one error or omission
	25	A1		Do NOT allow 25.38 \rightarrow 25 Must see evidence of correct rounding
2(c)	$0.99 + 0.99 + 3 + 3.95 + 0.99$	M1	3	Using rounding ... $1 + 1 + 3 + 4 + 1$
	9.92 or 8p (left)	A1		10
	9.92 and Yes or 8p (left) and Yes	A1		10 and Yes SC2 10.83 and No SC1 10.83
2(d)	their 9.92 from (c) $\div 5$ or $(0.99 + 0.99 + 3 + 3.95 + 0.99) \div 5$	M1	3	ft their total from c if they added at least 4 books
	1.984	A1		cao
	1.98 or 198p	A1ft		Do NOT accept 198 without p ft any correct rounding of ≥ 3 dp back to 2dp if M1 awarded penalise further rounding after 1.98
	Total		9	

Question	Solution	Mark	Total	Comment
3(a)	The £3 is not to 2dp and should be for currency	B1	1	Accept "It should read 3.00"
3(b)	=mean(D2:D11)	B1	1	
	Total		14	

Question	Solution	Mark	Total	Comment
4(a)	0.3	B1	1	Accept 0.30
4(b)	$\frac{4}{10} = \frac{2}{5}$	B2	2	B1 for $\frac{4}{10}$ or 0.4 or 40% or for any correctly cancelled fraction <1 SC1 $\frac{3}{5}$
	Total		3	

Question	Solution	Mark	Total	Comment	
5(a)	19, 32, 35, 37, 50, 55	M1	3	Ordering to at least half way from either end	
	Indication that it is between 35 and 37	M1 dep		Circling the middle two numbers is enough	
	36	A1		SC2 12.7 SC1 4.7, 12, 12.4, 13, 19.4, 24.5	
5(b)	Correct method for any one row	M1	4	Bar	
	Correct percentage for any one row	A1		Percentage of bar which is sugar	
				Alpen Light, Apple and Sultana	24.7
				Cadbury Brunch, Raisin	40.6
				Eat Natural, Brazil and Sultana	38.8
				Go Ahead, Apple Bake	35.4
				Kellogg's Nutri-Grain, Strawberry	32.4
Trek, Berry Burst	44.5				
Fully correct percentages	A1	Need not be to 1dp here			
All correct to 1dp	B1ft	ft their values			
5(c)	ft their table	B1ft	1	Accept any clear indication of the correct bar	
5(d)	ft their table (>40%)	B2ft	2	B1 40% seen or B1 for correct answer with no more than one incorrect or missing Accept any clear indication of the correct bar	
	Total		10		

Question	Solution	Mark	Total	Comment
6(a)	360 ÷ 40 or 9 or any 'number made' ÷ 40 × 360	M1	5	Correct method to find any angle
	144 or 90 or 63 or 45 or 18	A1		Any correct angle (may be inferred from pie chart if no working shown)
	144 and 90 and 63 and 45 and 18	A1		Choc = 90° Vanilla = 144° Coffee and walnut = 45° Red velvet = 18° Lemon drizzle = 63°
	Angles drawn correctly on pie chart (tolerance of 3°)	A1ft		ft their 5 angles
	All sectors correctly labelled	A1ft		ft their 5 angles
6(b)	Scheme 1 – pictogram		4	
	Pictogram	B1		
	Key correct for their symbol	B1		
	All rows correct	B2		B1 for at least 3 rows correct
	Scheme 2 – bar chart/vertical line		4	
	Bar chart or vertical line graph	B1		
	Correctly labelled axes	B1		Both name and sensible scale
All bars correct height	B2	B1 for at least 3 bars at correct height or all 5 correct heights shown (tolerance ½ a small square)		
6(c)	Yes ticked AND statement to say it goes through the origin	B1	1	
	Total		10	

Question	Solution	Mark	Total	Comment
7	1155	B1	1	Accept 11:55, 1155h, 11.55, 11.55am Do NOT accept 11.55pm
	Total		1	
	Total		40	