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ASSESSMENT and QUALIFICATIONS ALLIANCE

General Certificate of Secondary Education

Mathematics 3301
Specification A

Paper 1 Foundation Tier

Mark Scheme

2006 examination – June series

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' 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.

The following abbreviations are used on the mark scheme:

M	Method marks awarded for a correct method.
A	Accuracy marks awarded when following on from a correct method. It is not necessary always to see the method. This can be implied.
B	Marks awarded independent of method.
M dep	A method mark which is dependent on a previous method mark being awarded.
ft	Follow through marks. Marks awarded for correct working following a mistake in an earlier step.
SC	Special Case. Marks awarded for a common misinterpretation which has some mathematical worth.
oe	Or equivalent.
eeoo	Each error or omission.

Paper 1F

1(a)	8721	B1	
1(b)	Any even number using all the cards	B1	

2(a)	2 patterns	B1	
2(b)	7 9 11	B2ft	B1 for 2 correct
2(c)	Add 2 or the next odd number	B1	oe

3(a)	6 4 1	B2	B1 for 2 correct
3(b)	5 3 2	B2	B1 for 2 correct

4(a)	26	B1	
4(b)	12	B1	SC B1 for 12 and 26

5(a)	1080 750 200	B2	B1 for 2 correct
	Total 2030	B1ft	
5(b)	Two thousand and thirty pounds 2030(.00) in box	B1ft B1ft	B0 if 2 or 30 used

6(a)	Parallelogram Kite Trapezium	B1 B1 B1	
6(b)(i)	Different quadrilateral drawn eg square, rectangle, rhombus, arrowhead, irregular quadrilateral	B1	Accept freehand drawing
6(b)(ii)	Correct name for 6(b)(i)	B1	Accept oblong, diamond, irregular

7(a)	12	B1	
7(b)	Education	B1	
7(c)	Bar at correct height of 5	B2	B1 for sight of 5 or their % ≤ 25 and bar correct ft

8(a)	18×80 or 1440	M1	or sight of digits 144
	14.40	A1	
8(b)	$18 \times 2 \div 9$	M1	
	4	A1	
8(c)	Multiply by 9	B1	Allow in either order
	Divide by 2	B1	

9(a)	10×6 or 80 (–) 20	M1	
	60	A1	
9(b)	4.2 or 96 – 54	M1	
	42	A1	

10(a)(i)	$\frac{1}{6}$	B1	oe
10(a)(ii)	$\frac{4}{6}$	B1	oe
10(b)	Yes and correct reason eg each number lands about the same number of times	B2	oe B1 for Yes with reference to the spinner B1 for No with they all should be the same

11(a)(i)	24 and 26 50	B1 B1ft	
11(a)(ii)	2 –3 –1	B1 + B1 B1ft	ft with at least 1 negative number used
11(b)	$3a$ $5a$ $8a$	B1 + B1 B1ft	With consistent use of a

12	*True*	B1	
	False	B1	
	True	B1	

13	8cm line drawn (±2mm)	B1	
	58° or 32° angle correct (±2°)	B1	angle drawn on their 8cm line ignore labels
	Triangle fully correct	B1	in correct orientation

14	Two correct numbers in same form	M1	eg 0.22 and 0.19 or 22% and 19% or fractions with common denominator
	Three correct numbers in same form	M1	eg 0.15, 0.22 and 0.19 or 15%, 22% and 19% or fractions with common denominator
	$\frac{3}{20}$ 19% 0.22	A1	oe M2 A1 $\frac{3}{20}$ = 15% or oe and correct solution SC1 All correct with no working

15	5×10^3	B1	
	10 000	B1	
	7×10^4	B1	

16(a)	$Q(5, 4)$, $R(4, 0)$, $S(0, 1)$	B2	B1 for 2 correct
16(b)	$\frac{1}{2} \times 4 \times 1$ or 2	M1	or length of side = 4.1cm (±1mm)
	$4 \times$ (their 2) + 9 or $25 - 4 \times$ (their 2)	M1	or (their length)^2
	17	A1	M2A1 17 (counting squares) SC2 17 with no working SC1 15 to 19 inclusive
	cm^2	B1	

17	500 ÷ 10 or 50	M1	or 500 × 3 or 500 ÷ 5 or 100
	(their 50) × 3 or 150	M1	or 1500 ÷ 10 or (their 100) × 3
	(their 150) ÷ 5	M1	or (their 300) ÷ 10
	30	A1	

18(a)	0.7	B1	oe
18(b)	0.2	B1	oe

19	Correct pair of comparable values (ignore units)	B2	eg 1.5 and 1.6 (per 100g) 9 and 9.6 (per 600g) (3) and 3.2 (per 200g) 4.5 and (4.8) (per 300g) 0.66… and 0.625 (g/p) 1.5 and 1.8 (difference) oe B1 for finding one correct comparable value or correct method to find one value 1.80 alone scores B0
	Regular	B1ft	For correct comparison ft allow their decision only if B1 given

20	360 – (60 + 140 + 115)	M1	
	45	A1	
	135	A1ft	ft for 180 – (their 45)

21(a)	<table><tr><th></th><th>Walk</th><th>Other</th></tr><tr><td>**Boy**</td><td></td><td>2</td></tr><tr><td>**Girl**</td><td>3</td><td>3</td></tr></table>	B2	B1 Any two correct
21(b)	No and explanation. eg $\frac{3}{6}$ is same as $\frac{2}{4}$ Same proportion boys/girls Equally likely (Can't decide) sample too small	B2	oe B1 No and incomplete explanation or implication that the number of boys and girls should be equal or correct explanation with no decision

22(a)	E	B1	
22(b)	C	B1	
22(c)	180 – 115	M1	
	65	A1	

23(a)	$6x + 5$	B2	B1 for $6x$ or $+ 5$ eg $6x – 5$ scores B1
23(b)(i)	15	B1	Allow answer embedded in equation
23(b)(ii)	$6y – 10 = 20$ or $3y – 5 = 10$	M1	
	$6y = 30$ or $3y = 15$	M1dep	
	$(y) = 5$	A1	SC2 answer embedded in original equation or their correct expansion

24	$\frac{100\times30}{20}$ or $\frac{100\times36}{18}$	M1	Allow a pair of approximations which cancel to 2 or 5
	150 or 200	A1ft	ft from their pair of approximations Answer must be a whole number

25	3×180 or 540	M1	with no evidence of measuring angles $360 \div 5$ or 72
	(their 540) ÷ 5	M1	180 – (their 72)
	108	A1	

26(a)	$x + 2$	B1	
26(b)	$x – 2$	B1	