

TEAM MATHS CHALLENGE
2014

REGIONAL FINAL

SUPERVISOR'S BOOKLET

Please ensure that students do not have access to this booklet, and take care to hold it so that answers cannot be seen.

Please ensure that students use blue or black ink to write their answers; teachers are asked to use red ink for marking.

SHUTTLE

ANSWERS

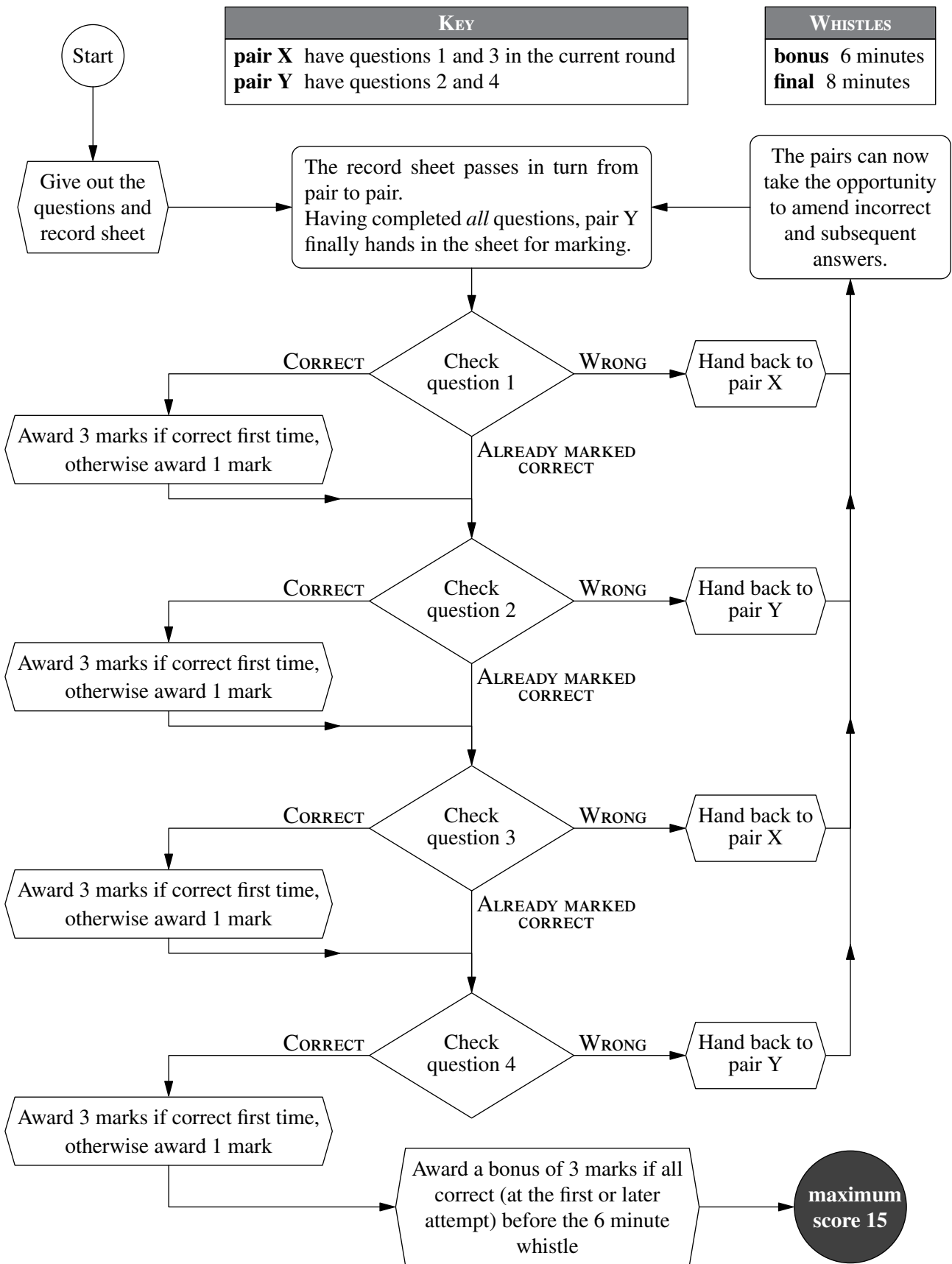
A1 5	B1 19	C1 333	D1 1.5 or $\frac{3}{2}$ or $1\frac{1}{2}$
A2 7	B2 55	C2 25	D2 20
A3 14	B3 75	C3 30	D3 120
A4 21	B4 224	C4 165	D4 96

On the students' response sheet please circle the mark awarded for each part of the question (either 3, 1 or 0), and cross out the other marks.

The flowchart opposite explains the order in which questions should be marked.

SHUTTLE

FLOWCHART



CROSSNUMBER

	1		2		3		4	
5			6					
	7	8				9		10
11				12	13			
14			15				16	
		17				18		
19	20				21		22	
			23				24	
25					26			

ACROSS

- 75% of 4 DOWN (3)
- A seventh power (4)
- An angle of an isosceles triangle that has 68° as one of its angles (2)
- A multiple of the sum of its digits (3)
- A square number multiplied by 24 ACROSS (3)
- The largest three-digit Fibonacci number (3)
- The sum of its digits is 15 DOWN (3)
- The product of an even square and a prime (2)
- Twenty less than 5 ACROSS (2)
- A multiple of 15 DOWN (3)
- The product of 28 and the previous triangular number (3)
- A square number (3)
- Its digits sum to ten (3)
- Half of 9 DOWN (2)
- The number of minutes in four days (4)
- The mean of 1 DOWN and 9 ACROSS (3)

DOWN

- The product of all the primes in the twenties (3)
- Six more than 1 ACROSS (3)
- A factor of 3 ACROSS (2)
- The product of an even cube and a prime (3)
- The next prime after 24 ACROSS (2)
- Twice a prime number (2)
- 11 DOWN minus 3 ACROSS (4)
- The product of two consecutive triangular numbers (4)
- The sum of all the factors of 28 (2)
- The sum of the fourth powers of two different numbers (2)
- Half of 5 ACROSS (2)
- A square number that is also a triangular number (2)
- The remainder when 11 DOWN is divided by 3 ACROSS (3)
- A power of two (3)
- 9 ACROSS minus 40 (3)
- 13 DOWN minus 16 ACROSS (2)

	¹ 6	0	² 6		³ 2	1	⁴ 8	7
⁵ 5	6		⁶ 1	1	7		0	
	⁷ 7	⁸ 5	2			⁹ 9	8	¹⁰ 7
¹¹ 9		3		¹² 8	¹³ 5	4		3
¹⁴ 5	2		¹⁵ 1		6		¹⁶ 3	6
5		¹⁷ 2	7	2		¹⁸ 3		8
¹⁹ 5	²⁰ 8	8			²¹ 1	6	²² 9	
	0		²³ 2	6	2		²⁴ 4	7
²⁵ 5	7	6	0		²⁶ 8	2	7	

Marking Instructions—a reminder

- Pairs may only communicate through the teacher, and only to request that the other pair works on a particular clue.
- When a pair enters an answer in the Answer Grid, the teacher checks each digit of the answer:
 - if it is correct, place a tick in the dotted circle and award one mark
 - if it is wrong, cross it out, write in the correct digit, and place a cross in the dotted circle
 - the correct answer is then shown to both pairs so that they are up-to-date.
- A pair may enter just one digit if they wish, rather than a complete answer.
- A pair may sacrifice a square, by guessing, if they wish.

1. Number of coins:

102

6. Number of teams:

8

2. Number of degrees:

80

7. Size of angle:

60

degrees

3. Number of days:

14

8. Length of rectangle:

25

cm

4. Number of ways:

12

9. Smallest number:

36

5. Amount of money:

313

£

10. Sum of each pair:

24

TEAM NUMBER

SCHOOL NAME

A1	1	<input type="radio"/> 2 <input type="radio"/> 0	A6	270	<input type="radio"/> 2 <input type="radio"/> 0	A11	64°	<input type="radio"/> 2 <input type="radio"/> 0
B1	150 m^2	<input type="radio"/> 2 <input type="radio"/> 0	B6	3	<input type="radio"/> 2 <input type="radio"/> 0	B11	0.6	<input type="radio"/> 2 <input type="radio"/> 0
A2	5, 8, 9, 9, 9	<input type="radio"/> 2 <input type="radio"/> 0	A7	52	<input type="radio"/> 2 <input type="radio"/> 0	A12	8	<input type="radio"/> 2 <input type="radio"/> 0
B2	48	<input type="radio"/> 2 <input type="radio"/> 0	B7	4 ft 8 in	<input type="radio"/> 2 <input type="radio"/> 0	B12	125°	<input type="radio"/> 2 <input type="radio"/> 0
A3	2	<input type="radio"/> 2 <input type="radio"/> 0	A8	(5, 5), (6, 7)	<input type="radio"/> 2 <input type="radio"/> 0	A13	£ 120	<input type="radio"/> 2 <input type="radio"/> 0
B3	Monday	<input type="radio"/> 2 <input type="radio"/> 0	B8	16	<input type="radio"/> 2 <input type="radio"/> 0	B13	33	<input type="radio"/> 2 <input type="radio"/> 0
A4	12	<input type="radio"/> 2 <input type="radio"/> 0	A9	7	<input type="radio"/> 2 <input type="radio"/> 0	A14	1.7	<input type="radio"/> 2 <input type="radio"/> 0
B4	4	<input type="radio"/> 2 <input type="radio"/> 0	B9	100	<input type="radio"/> 2 <input type="radio"/> 0	B14	40°	<input type="radio"/> 2 <input type="radio"/> 0
A5	4 st 13 lb	<input type="radio"/> 2 <input type="radio"/> 0	A10	12th October	<input type="radio"/> 2 <input type="radio"/> 0	A15	526000	<input type="radio"/> 2 <input type="radio"/> 0
B5	7.65 km	<input type="radio"/> 2 <input type="radio"/> 0	B10	54 cm	<input type="radio"/> 2 <input type="radio"/> 0	B15	(0, 7), (4, 5)	<input type="radio"/> 2 <input type="radio"/> 0

Correct answers score 2 points: circle 2 or 0 for each question and cross out the other number.

At the end of the round, draw a line under the last question attempted.

FINAL SCORE /60

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