

TEAM MATHS CHALLENGE
2016

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.

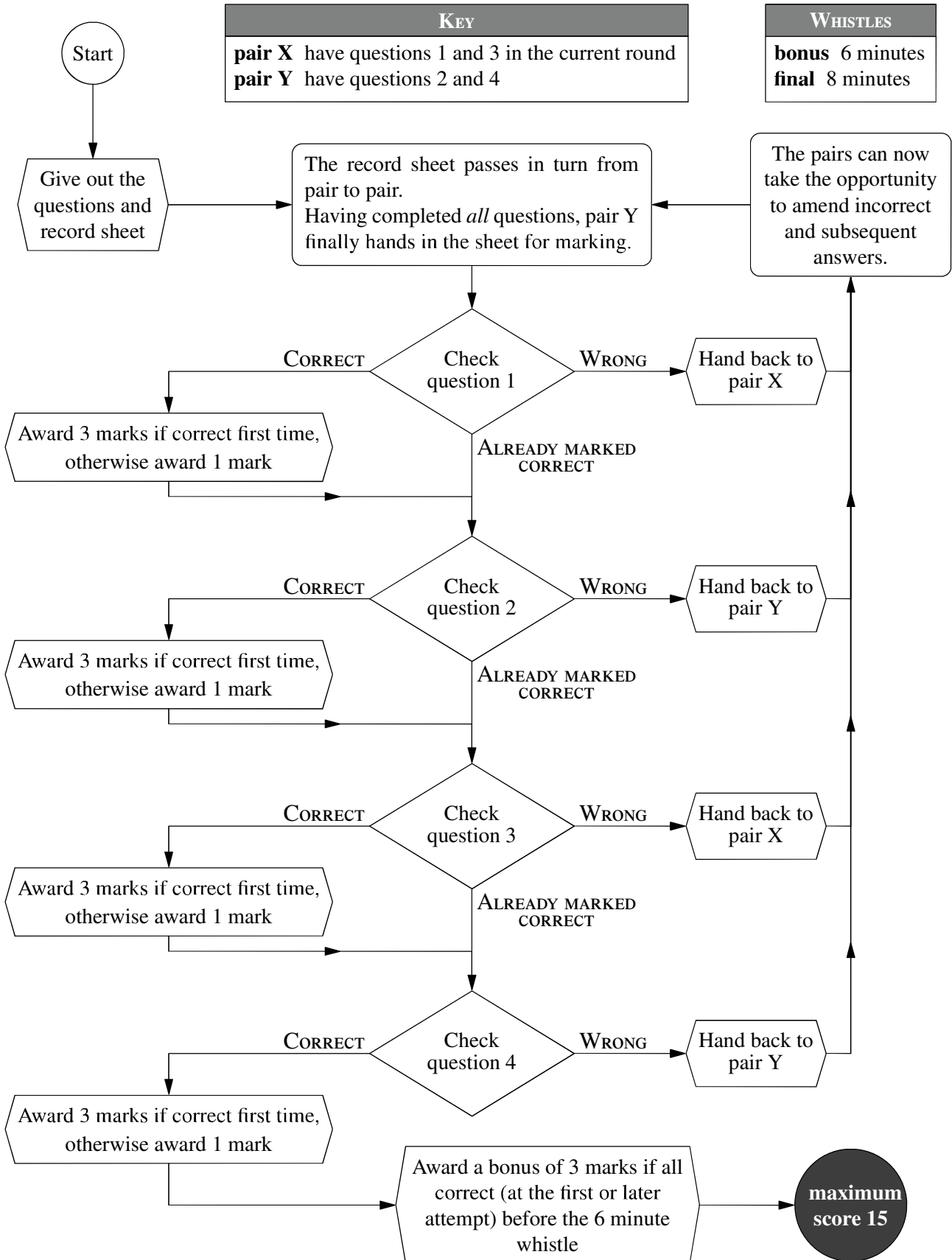
Please ensure that students use blue or black ink to write their answers; teachers are asked to use red ink for marking.

A1 6	B1 8	C1 14	D1 6
A2 10	B2 2	C2 7	D2 24
A3 162	B3 2016	C3 8	D3 27
A4 33	B4 2015	C4 10 000	D4 243

On the RESPONSE SHEET:

Circle the mark awarded for each question and cross out the others.
At the end of the round, either circle the bonus mark or cross it out.

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



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	

ACROSS

1. A triangular number that is also a square (2)
2. A factor of 22 ACROSS (2)
4. A multiple of the sum of its digits (3)
7. A factor of 2016 (3)
8. A multiple of 18 ACROSS (5)
10. 24 ACROSS plus 11 DOWN (2)
12. $88^2 + 33^2$ (4)
14. A prime number whose digits are consecutive primes in order (4)
17. An angle, in degrees, of an isosceles triangle that contains a 62° angle (2)
18. The sum of its digits is six (5)
22. 23 ACROSS + 20 DOWN + 19 DOWN (3)
23. A cube that is the sum of three consecutive cubes (3)
24. x where $x + 11$ DOWN = $3x - 79$ (2)
25. Square root of 20 DOWN (2)

DOWN

1. A factor of 2016 (3)
3. $12^2 + 33^2$ (4)
4. 3 DOWN + 10 × 14 ACROSS (5)
5. 1 ACROSS minus 2 (2)
6. A factor of 2016 (2)
9. A multiple of the sum of its digits (3)
11. A cube (2)
12. The sum of two squares in two ways (2)
13. 4 DOWN + 12 ACROSS (5)
15. The sum of the digits in this number's column is ten (3)
16. A triangular number also a square (4)
19. The number of primes that are less than fifty (2)
20. A square that becomes a cube when four is added to it (3)
21. A multiple of 25 ACROSS (2)

CROSSNUMBER

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

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.

22

6.

240

pounds

2.

(a) 26 (b) 24

degrees

7.

250 000

3.

(a) 2016 (b) 2016

8.

94

metres

4.

trapezium, rhombus

9.

59, 60, 61
71, 72, 73
(in either order)

5.

7

10.

42 857

On the RESPONSE SHEET:

Circle the mark awarded for each question and cross out the others.

TEAM NUMBER SCHOOL NAME

A1 9 square units <input type="radio"/> 0 <input type="radio"/> 2	A6 141 <input type="radio"/> 0 <input type="radio"/> 2	A11 11:22 <input type="radio"/> 0 <input type="radio"/> 2
B1 8 gloves <input type="radio"/> 0 <input type="radio"/> 2	B6 £10 200 £ <input type="radio"/> 0 <input type="radio"/> 2	B11 28 November <input type="radio"/> 0 <input type="radio"/> 2
A2 970 <input type="radio"/> 0 <input type="radio"/> 2	A7 30 minutes <input type="radio"/> 0 <input type="radio"/> 2	A12 6102 <input type="radio"/> 0 <input type="radio"/> 2
B2 232 <input type="radio"/> 0 <input type="radio"/> 2	B7 80 degrees <input type="radio"/> 0 <input type="radio"/> 2	B12 979 <input type="radio"/> 0 <input type="radio"/> 2
A3 22 pens <input type="radio"/> 0 <input type="radio"/> 2	A8 10.8 metres <input type="radio"/> 0 <input type="radio"/> 2	A13 48 miles per gallon <input type="radio"/> 0 <input type="radio"/> 2
B3 98 <input type="radio"/> 0 <input type="radio"/> 2	B8 15:50 <input type="radio"/> 0 <input type="radio"/> 2	B13 7086 <input type="radio"/> 0 <input type="radio"/> 2
A4 £164.25 <input type="radio"/> 0 <input type="radio"/> 2	A9 2nd March <input type="radio"/> 0 <input type="radio"/> 2	A14 (1, 1) <input type="radio"/> 0 <input type="radio"/> 2
B4 (3, 6) <input type="radio"/> 0 <input type="radio"/> 2	B9 9 months <input type="radio"/> 0 <input type="radio"/> 2	B14 2 seconds <input type="radio"/> 0 <input type="radio"/> 2
A5 45 degrees <input type="radio"/> 0 <input type="radio"/> 2	A10 97 minutes <input type="radio"/> 0 <input type="radio"/> 2	A15 $\frac{1}{2}$ <input type="radio"/> 0 <input type="radio"/> 2
B5 2592 cm ³ <input type="radio"/> 0 <input type="radio"/> 2	B10 39 <input type="radio"/> 0 <input type="radio"/> 2	B15 30 pence <input type="radio"/> 0 <input type="radio"/> 2

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

BACK

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