



UKMT Team Maths Challenge  
Regional Final 2013  
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			
	27					28		

**Across**

1. The mean of 12 Across, 12 Down and 1 Across (3)
3. The square of one less than 9 Down (4)
6. A factor of 8 Down (2)
7. The solution to  $\frac{x+1}{3} + \frac{x-9}{5} = 30$  (2)
10. The remainder when 8 Down is divided by 91 (2)
12.  $12^2 + 4^2 + 2^2 + 1^2$  (3)
14. The sum of 9 Down and 25 Down (2)
15. Half of 13 Down (3)
16. Twice 19 Down (3)
17. An interior angle of an isosceles triangle with one angle equal to 26 Across (2)
18. A multiple of 11 (3)
20. A consecutive prime to 19 Down (2)
23. The sum of all its factors is 28 (2)
26. The sum of 4 Down and 9 Down (2)
27. The value of  $(x + 1)(2x + 1)$  when  $x = 49$  (4)
28. The area of a triangle with base 24 Down and height 25 Down (3)



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				9				
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	15				16			
17			18	19			20	21
						22		
23	24		25		26			
	27					28		

**Down**

1. The product of 5 Down and 6 Across (4)
2. The sum of the digits of this number and the other digits in this column comes to 24 Down (3)
4. A perfect number (that is, a number which is the sum of all its factors not including itself) (2)
5. A Fibonacci number (2)
8. The largest three digit square number (3)
9. A square number that is also a triangular number (2)
11. A quarter of 13 Down (3)
12. Two more than 12 Across (3)
13. A cube number (3)
14. Twenty less than double the sum of 11 Down and 15 Across (3)
17. An odd multiple of 12 Down (3)
19. A prime number (2)
21. The number of minutes in 12 Across hours (4)
22. A square whose digits sum to a square (3)
24. The value of  $\frac{10 \times 8 \times 6 \times 4 \times 2}{2 \times 2 \times 2 \times 2 \times 2 \times 5}$  (2)
25. The square root of 3 Across (2)



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Team Number.....

School Name .....

	1		2		3	4		5		
Answer										Teachers must complete this column
Mark										Marks (7)
Answer			6					7	8	Marks (6)
Mark										
Answer					9					Marks (4)
Mark										
Answer	10	11		12		13		14		Marks (7)
Mark										
Answer		15				16				Marks (6)
Mark										
Answer	17			18	19			20	21	Marks (7)
Mark										
Answer							22			Marks (4)
Mark										
Answer	23	24		25		26				Marks (6)
Mark										
Answer		27					28			Marks (7)
Mark										

Total = \_\_\_\_\_ /54

+ 6

Score = \_\_\_\_\_