



Senior Team Maths Challenge 2007 Crossnumber Round



1	2		3		4		5	6		7
			8					9		
10					11					
2			12	13			14		15	
		16		17		18	4			
19	20							21		
			22	8						
23		24				25	26			27
				28	29		30		31	4
32	6				33					
		34					35			

Across

- 1 Palindrome
- 5 Remainder when forty is divided by a prime less than twenty five
- 8 Fibonacci number whose digit sum is divisible by four
- 9 x^{x-1} where x is an integer
- 10 Divisible by one sixth of 12 Across, but not one third of 12 Across
- 11 Four times the square root of 9 Across, minus one.
- 12 Exterior angle in degrees of a regular polygon with a number of sides divisible by five
- 14 24 Down minus 10 Down; divisible by two but not four
- 17 17 Across minus its digit sum is a square number
- 19 One more than a multiple of nine
- 21 25 Across - 12 Across + 8 Across; it has a digit sum equal to three
- 22 18 Down is five more than the difference between 22 Across and 35 Across
- 23 Odd number whose digit sum is divisible by five
- 25 Square of an odd number
- 28 Triangle number not divisible by three
- 30 Divisible by 2 and 3 but not by 3^2 or $(2^3 + 3^2)$
- 32 2^4 multiplied by a prime number
- 33 One more than 12 Across divided by three eighths
- 34 Twice a prime number and also the sum of two square numbers
- 35 $p^3 + p^2 - 1$ where p is a prime number

Down

- 2 Prime factor of 24 Down
- 3 Palindrome
- 4 Remainder when divided by seven is four
- 6 $x(x+1)$ where x is an integer
- 7 Number divisible by 7 giving remainder 2 when divided by 9
- 10 Twice a prime number; the difference between 24 Down and 14 Across
- 13 x^4 minus three where x is an integer
- 14 Twice a prime number
- 15 Product of two consecutive prime numbers
- 16 Sum of three consecutive Fibonacci numbers
- 18 Five more than the difference between 22 Across and 35 Across
- 20 Exterior angle in degrees of a regular polygon
- 21 One twelfth of the result, two hundred and fifty seven minus 5 Across
- 22 Mean of 11 Across, 21 Down and 34 Across
- 23 2 Down plus three times 7 Down
- 24 Eight times the difference between 15 Down and twice its digit sum
- 26 Highest common factor of the digit sum and digit product is a square not equal to one
- 27 Cube
- 29 27 Down + 16 Down - 14 Down
- 31 Sum of the factors of 20 Down



Senior Team Maths Challenge 2007
Crossnumber Round



1	2		3		4		5	6		7
			8					9		
10					11					
2			12	13			14		15	
			16		17		18	4		
19	20							21		
			22	8						
23		24				25	26			27
				28	29		30		31	4
32	6				33					
		34					35			

Across

- 1 Palindrome
- 5 Remainder when forty is divided by a prime less than twenty five
- 8 Fibonacci number whose digit sum is divisible by four
- 9 x^{x-1} where x is an integer
- 10 Divisible by one sixth of 12 Across, but not one third of 12 Across
- 11 Four times the square root of 9 Across, minus one.
- 12 Exterior angle in degrees of a regular polygon with a number of sides divisible by five
- 14 24 Down minus 10 Down; divisible by two but not four
- 17 17 Across minus its digit sum is a square number
- 19 One more than a multiple of nine
- 21 25 Across – 12 Across + 8 Across; it has a digit sum equal to three
- 22 18 Down is five more than the difference between 22 Across and 35 Across
- 23 Odd number whose digit sum is divisible by five
- 25 Square of an odd number
- 28 Triangle number not divisible by three
- 30 Divisible by 2 and 3 but not by 3^2 or $(2^3 + 3^2)$
- 32 2^4 multiplied by a prime number
- 33 One more than 12 Across divided by three eighths
- 34 Twice a prime number and also the sum of two square numbers
- 35 $p^3 + p^2 - 1$ where p is a prime number



Senior Team Maths Challenge 2007
Crossnumber Round



1	2		3		4		5	6		7
			8					9		
10					11					
2			12	13			14		15	
		16		17		18	4			
19	20							21		
			22	8						
23		24				25	26			27
				28	29		30		31	4
32	6				33					
		34					35			

Down

- 2 Prime factor of 24 Down
- 3 Palindrome
- 4 Remainder when divided by seven is four
- 6 $x(x+1)$ where x is an integer
- 7 Number divisible by 7 giving remainder 2 when divided by 9
- 10 Twice a prime number; the difference between 24 Down and 14 Across
- 13 x^4 minus three where x is an integer
- 14 Twice a prime number
- 15 Product of two consecutive prime numbers
- 16 Sum of three consecutive Fibonacci numbers
- 18 Five more than the difference between 22 Across and 35 Across
- 20 Exterior angle in degrees of a regular polygon
- 21 One twelfth of the result, two hundred and fifty seven minus 5 Across
- 22 Mean of 11 Across, 21 Down and 34 Across
- 23 2 Down plus three times 7 Down
- 24 Eight times the difference between 15 Down and twice its digit sum
- 26 Highest common factor of the digit sum and digit product is a square not equal to one
- 27 Cube
- 29 27 Down + 16 Down – 14 Down
- 31 Sum of the factors of 20 Down



Senior Team Maths Challenge 2007
Crossnumber Round



Team Number..... School/College Name.....

Answer											Total (8)
Mark											
Answer											Total (7)
Mark											
Answer											Total (8)
Mark											
Answer	2										Total (6)
Mark	-										
Answer							4				Total (5)
Mark							-				
Answer											Total (8)
Mark											
Answer				8							Total (5)
Mark				-							
Answer											Total (7)
Mark											
Answer									4		Total (7)
Mark									-		
Answer		6									Total (6)
Mark		-									
Answer											Total (8)
Mark											

Total = /75