DIFFERENT TYPE OF NUMBERS-1

1	Luis and Hans both have their birthdays on January 1st. In 2002 Luis is 13 and Hans is 17 years old. **(a)** Which is the next **year** after 2002 when both their ages will be prime numbers? *Answer (a)* .... [1] **(b)** In which **year** was Hans twice as old as Luis? *Answer (b)* .... [1]

MS-1	a) 2008	B1	allow January 2008	
	b) 1993	B1		2

2	Write down the next prime number after 89. *Answer* .... [1]

MS-2	97 cao	**1**	

3	Write down **(a)** an irrational number, *Answer(a)* .... [1] **(b)** a prime number between 60 and 70. *Answer(b)* .... [1]

MS-3	(a) any non square √ or π or e	1	√5 but not √9, √2/3 is OK, sin20 etc but not sin30 No fractions, decimals or root of negatives
	(b) 61 or 67	1	allow 61 **and** 67 but no other pairs

4	Write down the next two prime numbers after 47.
	Answer .... and .... [2]

MS-4			
	53 and 59	1, 1	independent of each other

5	p is the largest prime number between 50 and 100. q is the smallest prime number between 50 and 100. Calculate the value of $p - q$.
	Answer .... [2]

MS-5			
	44	2	**M1** 97 or 53 seen

6	The sum of the prime numbers less than 8 is equal to 17. **(a)** Find the sum of the prime numbers less than 21. *Answer(a)* .... [2] **(b)** The sum of the prime numbers less than x is 58. Find an integer value for x. *Answer(b) x =* .... [2]

MS-6	(a)	77		2	**M1** for 11,13,17,19 clearly identified, ignore numbers less than 8 with no other numbers greater than or equal to 8 besides possibly an extra 17
	(b)	either 18 or 19 or both		2FT	**M1** for 11,13,17 clearly identified, ignore numbers less than 8 with no other numbers greater than or equal to 8 besides possibly an extra 17 or for *their* (a) − 58

7	

(a) Write 30 as a product of its prime factors.

Answer(a) .... [2]

(b) Find the lowest common multiple (LCM) of 30 and 45.

Answer(b) .... [2]

MS-7	(a)	$2 \times 3 \times 5$		2	**B1** for 2, 3, 5 as prime factors
	(b)	90		2	**B1** for $90k$ or for listing multiples of each up to 90 or $2 \times 3^2 \times 5$

8	

8	9	10	11	12	13	14	15	16

From the list of numbers, write down

(a) the square numbers,

.... [1]

(b) a prime factor of 99.

.... [1]

MS-8	(a)	9 and 16	1	
	(b)	11	1	

9	Write down a prime number between 20 and 30.
	....[1]

MS-9	23 or 29	1	

10	22 17 25 41 39 4
	Work out the difference between the two prime numbers in the list above.
	....[2]

MS-10	24	2	**B1** for 17 or 41 identified

11	27 28 29 30 31 32 33
	From the list of numbers, write down
	(a) a multiple of 7,
	.... [1]
	(b) a cube number,
	.... [1]
	(c) a prime number.
	.... [1]

MS-11	(a)	28	1	
	(b)	27	1	
	(c)	29 or 31	1	