2015 Year 7 Number Test — *Mark scheme*

1. Write 3529 using expanded notation.

   $3 \times 1000 + 5 \times 100 \times 2 \times 10 + 9$ (accept index form) [1] ✓

2. Using the number 5462
   a)   Write the number in words   [1]

   five thousand four hundred and sixty two ✓

   b)   Give the place value of the 6 digit   10's / tens [1] ✓

   c)   What is the value of the 4 digit?   400 / 4 hund [1] ✓

3. Write three thousand four hundred and seventy two in numeral form.

   3472 ✓   [1]

4. Write 2000 + 300 + 50 + 8 as a simple (basic) numeral.

   2358   [1]

5. Show full working for the following questions
   (marks will only be awarded if correct working is shown).

a) $16 + 23 + 32 + 5 =$	b) $288 \div 6 =$
$\begin{array}{r} 16 \\ 23 \\ 32 \\ +\ 5 \\ \hline 76 \end{array}$ ✓	$6\overline{)2\,8\,^48}$ 48 ✓ ✓
[1]	[2]
c) $16 \times 9 =$	d) $23 \times 42 =$
$\begin{array}{r} 16 \\ \times\ 9 \\ \hline 144 \end{array}$ ✓	$\begin{array}{r} 23 \\ \times\ 42 \\ \hline 46 \\ 920 \\ \hline 986 \end{array}$ ✓ ✓
[1]	[2]

(12)

e) $134 - 48 =$	f) $5 + 6 \times 3 - 2 =$
$\begin{array}{r} {}^{12} \\ 1\cancel{3}4 \\ -48 \\ \hline 86 \checkmark \end{array}$	$= 5 + 18 - 2$ $= 21 \quad \checkmark$
[1]	[1]
g) $(3 + 7) \times (5 - 2) + 6 =$	h) $31038 \div 9 =$
$= 10 \times 3 + 6$ $= 30 \quad + 6$ $= 36 \quad \checkmark$	$3448 \frac{6}{9} \checkmark \text{ or } r6 \checkmark$ $9\overline{)31^{4}0^{3}3^{7}8}$
[1]	[2]

4. Show full working for the following questions
   (marks will only be awarded if correct working is shown).

a) Find the sum of 11 and 82	b) Calculate the difference between 63 and 21
$\begin{array}{r} \checkmark 11 \\ +82 \\ \hline 93 \checkmark \end{array}$	$\begin{array}{r} \checkmark 63 \\ -21 \\ \hline 42 \checkmark \end{array}$
[2]	[2]
c) What is the product 15 and 3?	
$\begin{array}{r} \checkmark 15 \\ \times 3 \\ \hline 45 \checkmark \end{array}$	must have all 3
[2]	

5. List the first 3 square numbers _____1, 4, 9_____ [1]

6. What is the opposite operation of multiplication? _____$\div$, division_____ [1]

7. a) Write $4 \times 4 \times 4 \times 4$ in index form. _____4^4_____ [1]

   b) Give $2 \times 2 \times 2 + 3 \times 3$ in index form and as a basic numeral

   $= 8 + 9$

   $= 17$

   Index form_____$2^3 + 3^2$_____ [2]

   Basic numeral_____17_____ [1]

(17)

8. List all of the factors of 24. [2]

6 ✓   8 ✓✓

1, 24   2, 12   , 3, 8   , 4, 6

9. a) Give the first 4 multiples of 3. $3, 6, 9, 12$ [1]

b) Find the lowest common multiple of 8 and 6.

8: 8, 16, (24), 32 ✓
6: 6, 12, 18, (24)

24 ✓ [2]

c) Find the highest common factor of 12 and 18.

12: 1, 12   2, (6)   3, 4
18: 1, 18   2, 9   3, (6)   HCF = 6 [2]

b) Give the first 3 prime numbers $2, 3, 5$ [1]
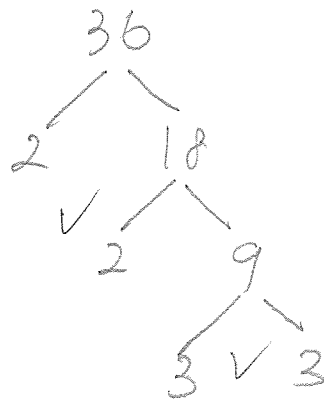
10. Rewrite as a basic numeral:
3×10^3

3000 [1]

11. Using leading figure estimation, approximate the answers to the following problems (correct working must be shown):
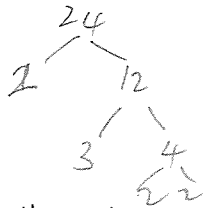
a) $38 + 43 + 24 =$	b) $26 \times 12 =$	c) $78 - 16 =$
$40 + 40 + 20$ ✓	30×10 ✓	$80 - 20$ ✓
$= 100$ ✓	$= 300$ ✓	$= 60$ ✓
[2]	[2]	[2]
d) $8 \times 17 =$	f) $42 \div 11 =$	
8×20 ✓	$40 \div 10$ ✓	
$= 160$ ✓	$= 4$ ✓	
[2]	[2]	

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12. a) Draw the prime factor tree for 36 [2]

$$36$$

$$2 \qquad 18$$

$$2 \qquad 9$$

$$3 \qquad 3$$

b) Write 24 as a product of prime factors.

$$24$$

$$2 \qquad 12$$

$$3 \qquad 4$$

$$2 \times 2 \times 2 \times 3$$ _____ [1]

13. Complete the sentence $4 \times (3 + 8) = 4 \times 3 + 4 \times 8$ _____ [1]

14. Use the **distributive property** to evaluate the problems
(show full working and your use of the distributive property):

a) $8 \times 6 + 2 \times 6 =$

$$6 \times (8 + 2)$$
$$= 6 \times 10$$
$$= 60$$

60 _____ [2]

b) $70 \times 12 - 60 \times 12 =$

$$12 \times (70 - 60)$$
$$= 12 \times 10$$
$$= 120$$

120 _____ [2]

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