

# All Kinds of Word Problems

Number and Place Value  
10 Questions, Answers and a  
Challenge

Year 5




**THIRD SPACE**  
LEARNING

# Year 5 Problems on Number and Place Value

Name.....

Date.....Class .....

School .....

 Please write your answer on the answer line provided. You can use the space provided below the question for working out if you need it.

**1** Look at the table below. Can you work out the place value of the different digits?

Write your answers in words like the example shown.  
If the number does not have a 9, 4, 0, 7 or 2 in it then leave that box blank.

| Number  | Place value of 9 | Place value of 4   | Place value of 0 | Place value of 7 | Place value of 2                    |
|---------|------------------|--------------------|------------------|------------------|-------------------------------------|
| 2345    |                  | Four tens or forty |                  |                  | Two thousands or 2 lots of thousand |
| 76 029  |                  |                    |                  |                  |                                     |
| 569 012 |                  |                    |                  |                  |                                     |
| 679 021 |                  |                    |                  |                  |                                     |
| 49 072  |                  |                    |                  |                  |                                     |
| 59 021  |                  |                    |                  |                  |                                     |

- 2** Raja, Samai and John organised a sponsored walk. They had seven friends who joined them. They each raised some money.

Can you round the amount each child raised:

- a** To the nearest whole number?  
**b** To the nearest tenth?

Write your answers in the table below.

| Child                               | Raja   | Samai  | John   | Naomi  | Megan  | Thomas | Sam    | Rachel | Harry  | Max    |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Money raised                        | £15.50 | £24.56 | £19.99 | £26.11 | £13.85 | £10.01 | £16.49 | £22.75 | £19.05 | £17.32 |
| Rounded to the nearest whole number | £      | £      | £      | £      | £      | £      | £      | £      | £      | £      |
| Rounded to the nearest tenth        | £      | £      | £      | £      | £      | £      | £      | £      | £      | £      |

- 3** Create four 6 digit numbers so that in each number:  
 The sum of the digits is 6.  
 The first digit is 3.  
 The last digit is 2.

- a** What is the largest number you have created?  
**b** What is the smallest number you have created?



Answer a .....

Answer b .....

4

Gemma has created a sequence:

....., 25, 21, ....., ....., 9

- a What is the rule of Gemma's sequence?
- b What would the tenth number in the sequence be?



Answer a .....

Answer b .....

- 5 Seren has got 10 counters to represent different numbers using the place value grid shown below.



| HTH | TTh | TH | H | T | O |
|-----|-----|----|---|---|---|
|     |     |    |   |   |   |

- a Can you help her identify the largest 6 digit number she can make that has at least one counter in each column of the grid?
- b Can you help her identify the smallest 6 digit number she can make that has at least one counter in each column of the grid?
- c Can you help her make a number that falls in the middle of the largest and smallest numbers she made in a and b?



Answer a .....

Answer b .....

Answer c .....

6

Roman numerals use letters instead of numbers.  
A combination of letters make a number.

Can you work out the dates from the clues?  
The conversions below should help you.

I = 1    V = 5    X = 10    L = 50    C = 100    D = 500    M = 1000

For example, 2017 would be written as MMXVII:  
MM -> 2000, X -> 10, V -> 5 and II -> 2

Robert was born in MCMLXVIII  
Anna was born in MCMXCIX  
Tom was born in MMVII

- a How much older is Robert than Tom?
- b How much older is Anna than Tom?



Answer a .....  
Answer b .....

- 7 Jasmine has a set of 0 - 9 digit cards (0, 1, 2, 3, 4, 5, 6, 7, 8, 9).  
She wants to make 6 digit numbers.  
She can only use each digit card once in each 6 digit number.
- a What is the smallest odd number Jasmine can make?
  - b What is the largest odd number Jasmine can make?
  - c What is the smallest even number Jasmine can make?
  - d What is the largest even number Jasmine can make?
  - e What is the largest number she can make that can be rounded to 500 000?



Answer a .....

Answer b .....

Answer c .....

Answer d .....

Answer e .....

8

Dotty, Juliette and Rosie have decided to grow sunflowers from seeds.  
Dotty's sunflower grows 10 cm every week for a year.  
Juliette's sunflower grows 100 cm every month for a year.  
Rosie's sunflower grows 1000 cm every 3 months for a year.

Who has the tallest sunflower when they are measured at the end of the year?



Answer .....



- 9 Sammy the seagull needs to have two fish for his dinner. He is flying 15 cm above the water gazing down on two fish. The first fish is 2 cm below sea level and the second is 7 cm below sea level.

Sammy catches each fish one at a time. Once he has caught each fish, he returns to his original position above the water.

How many centimetres does Sammy travel altogether to catch his dinner?



Answer .....

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- 10 I have a 5 digit number.  
Can you work out what my number could be using the clues below?

It is not a decimal number.  
The ten thousand digit is the same as the ones digit.  
The tens digit is the same as the thousands digit.  
At least one of the digits has no value.  
The digits all add up to 6.



Answer .....

# Challenge Question!

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10  |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20  |
| 21 | 22 | 23 | 23 | 25 | 26 | 27 | 28 | 29 | 30  |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40  |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50  |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60  |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70  |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90  |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Using the digits in three numbers from your hundred square, you can make different numbers. For example, if you picked out 2, 14 and 36, you could make the number 14 236.

Using three numbers from your hundred square in this way:

- a What is the lowest number you could make?
- b What is the largest number you could make?
- c Now identify three 2 digit numbers from your hundred square that can be used in this way to make a 6 digit number which is a multiple of 3.

Questions to consider:  
 How could you go about this?  
 Can you find more than one set of numbers?  
 Is there a pattern?

Answer a .....

Answer b .....

Answer c .....

## Answer Sheet

1

| Number  | Place value of 9                         | Place value of 4                            | Place value of 0      | Place value of 7                               | Place value of 2                    |
|---------|--|---|-----------------------|--|-------------------------------------|
| 2345    |  | Four tens or forty                          |                       |  | Two thousands or 2 lots of thousand |
| 76 029  | Nine or Nine ones                        |   | Zero or zero hundreds | Seventy thousand or seven lots of ten thousand | Twenty or two lots of ten           |
| 569 012 | Nine thousand or nine lots of thousands  |   | Zero or zero hundreds |  | Two or two ones                     |
| 679 021 | Nine thousand or nine lots of a thousand |   | Zero or zero hundreds |  |                                     |
| 49 072  |  | Forty thousand or four lots of ten thousand | Zero or zero hundreds | Seventy or seven lots of ten                   | Two or two ones                     |
| 59 021  | Nine thousand or nine lots of thousands  |   | Zero or zero hundreds |  | Twenty or two lots of ten           |

Content Domain: Determining values (5N3a)

2

| Child                               | Raja   | Samai  | John   | Naomi  | Megan  | Thomas | Sam    | Rachel | Harry  | Max    |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Money raised                        | £15.50 | £24.56 | £19.99 | £26.11 | £13.85 | £10.01 | £16.49 | £22.75 | £19.05 | £17.32 |
| Rounded to the nearest whole number | £16.00 | £25.00 | £20.00 | £26.00 | £14.00 | £10.00 | £16.00 | £23.00 | £19.00 | £17.00 |
| Rounded to the nearest tenth        | £15.50 | £24.60 | £20.00 | £26.10 | £13.90 | £10.00 | £16.50 | £22.80 | £19.00 | £17.30 |

Content Domain: Rounding (5N4)

- 3 a. 310 002 is the largest number.  
b. 300 012 is the smallest number.

Content Domain: Comparing values (5N2)

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- 4 a. The tenth number would be  $-7$ .  
(The sequence would continue: 29, 25, 21, 17, 13, 9, 5, 1,  $-3$ ,  $-7$ )  
b. The rule is subtract 4 each time.

Content Domain: Use of negative numbers (5N5)

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- 5 a. 511 111 is the largest 6 digit number Seren can make.  
b. 111 115 is the smallest 6 digit number Seren can make.  
c. 311 113 falls in the middle of 511 111 and 111 115.

Content Domain: Find a number 100 more or less than a given number (3N2b)

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- 6 a. Robert is 39 years older than Tom.  
b. Anna is 8 years older than Tom.  
(MCMLXVIII = 1968, MCMXCIX = 1999, MMVII = 2007)

Content Domain: Read and recognise Roman Numerals (5N3b)

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- 7 a. 102 345 is the smallest odd number.  
b. 987 653 is the largest odd number.  
c. 102 346 the smallest even number.  
d. 987 654 is the largest even number.  
e. 549 876 is the largest number that she could make that would round to 500 000.

Content Domain: Comparing and identifying values (5N2, 5N3a)

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- 8 Rosie has the largest sunflower at the end of the year.  
( $10 \times 52 = 520$  cm,  $100 \times 12 = 1200$  cm,  $1000 \times 4 = 4000$  cm)

Content Domain: Counting forwards in 10s, 100s, 1000s (5N1)

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- 9 78 cm  
34 cm (for the first fish) + 44 cm (for the second fish)

Content Domain: Negative numbers (5N5)

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- 10 The number could be any of following possibilities:  
12 021, 21 012, 20 202, 30 003

Content Domain: Identifying values (5N3a)

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**Challenge Question**

- a. 123 is the lowest number.
- b. 9 998 100 is the highest number.
- c. If each of the 2 digit numbers are a multiple of 3 then the 6 digit number will be.

For example, 394 572 (made up of 39, 45 and 72).

Equally, if the entire number (however long it is) makes a multiple of 3 when you find the sum of the digits then the entire number will also be a multiple of 3.

For example, the sum of the digits in 123 456 789 are 45, so 123 456 789 is a multiple of 3.

**Content Domain: Comparing and identifying values (5N2, 5N3a)**

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