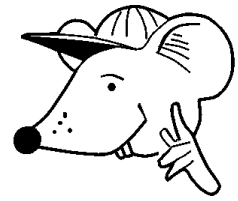


# MATHEMATICS



**N.S. Yr. 5 P.3**

**Read and write whole numbers.  
Partition numbers into ThHTU.**

## Equipment

Paper and pencil.  
Abacus useful.  
Calculator for extension work.

# MathSphere

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**UNDERSTANDING AND READING LARGE NUMBERS****Concepts**

The easiest way to read large numbers is to think of them as blocks of three, starting on the right.

Each block of three is hundreds, tens and units, which keep repeating themselves.

**The first block of three are HUNDREDS, TENS AND UNITS of ones or units.**

So 456 is four hundred and fifty six (*units*).

**The second block of three are HUNDREDS, TENS AND UNITS of thousands.**

So 456 456 is four hundred and fifty six *thousand* four hundred and fifty six.

THOUSANDS			ONES		
hundreds	tens	units or ones	hundreds	tens	units or ones
<b>4</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>6</b>

The thousands are often separated by a small space or a comma.

So the number below might be written as **456 456** or **456,456**.

**Think 'hundreds, tens, units' all the time.**

## Concepts - even larger numbers!

Work out how to read larger numbers by grouping into sets of three.

Each block or set of three is hundreds, tens and units, which keep repeating themselves.

**The first block of three are ones or units.**

So 678 is six hundred and seventy eight (*units*).

**The second block of three are thousands.**

So 678 678 is six hundred and seventy eight *thousand* six hundred and seventy eight.

**The third block of three are millions.**

So 678 678 678 is six hundred and seventy eight *million*, six hundred and seventy eight *thousand* and six hundred and seventy eight (*units*).

MILLIONS				THOUSANDS				UNITS OR ONES		
hundreds	tens	units or ones		hundreds	tens	units or ones		hundreds	tens	units or ones
6	7	8		6	7	8		6	7	8

Each set of three ( hundreds tens and units ) is read as a block, the second set being thousands and the third set being millions.

**NUMBER CARDS**

**Cut these out to use as cards for oral games. Further cards and a blank master can be found at the end of the module.**

**45 689**

**34 467**

**34 098**

**30 000**

**45 690**

Use the cards on page 4 for oral games - ask questions such as:

- find the card with a four on it which is worth 400.
- put the cards in order of size.
- read the number on the card
- find the card with thirty thousand on it.

### SPELLING

Watch that word forty  
- there's no 'u' in it!  
Don't ask me why!!



It is important to know how to spell the following words, which are all to do with reading and writing large numbers.

eleven  
thirteen  
fifteen  
nineteen  
thirty  
fifty  
hundred

twelve  
fourteen  
seventeen  
twenty  
forty  
ninety  
thousand

Try writing these in numbers:

1. Three thousand, two hundred.
2. Twenty six thousand, four hundred and seventy six.
3. Forty six thousand.
4. Eighty eight thousand and fifty nine.
5. Fifty three thousand four hundred and eleven.
6. Twenty seven thousand and twenty.

**THE VALUE OF DIGITS**

thousands			units		
h	t	u	h	t	u
	4	7	2	3	8

**The number above is forty seven thousand, two hundred and thirty eight.**

The digit 4 is worth 40 000

The digit 7 is worth 7 000

The digit 2 is worth 200

The digit 3 is worth 30

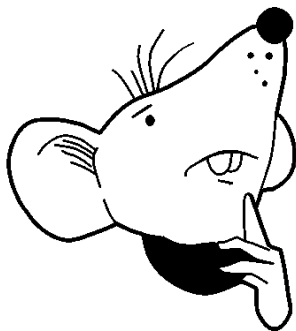
The digit 8 is worth 8

**Write down the value of the digits underlined in the numbers below.**

1. 35 000    2. 23 345    3. 9 182    4. 12 012    5. 32 658

6. 40 492    7. 31 190    8. 79 541    9. 53 200    10. 26 001

Let's see, thousands,  
hundreds, tens and  
units.



**Now, try to write out these numbers  
IN WORDS.**

The first one is done for you!

**11.** 23 456  
twenty three thousand, four hundred  
and fifty six.

**12.** 18 200

**13.** 9 900

**14.** 23 004

**15.** 16 500

$$42\ 531 = 40\ 000 + 2\ 000 + 500 + 30 + 1$$

What numbers need to go in the boxes below?

1.  $47\ 678 = 40\ 000 + 7\ 000 + \boxed{\phantom{000}} + 70 + 8$

2.  $93\ 412 = 90\ 000 + \boxed{\phantom{000}} + 400 + 10 + 2$

3.  $67\ 893 = \boxed{\phantom{000}} + 7\ 000 + 800 + 90 + 3$

4.  $98\ 765 = 90\ 000 + \boxed{\phantom{000}} + 700 + 60 + 5$

5.  $65\ 432 = 60\ 000 + 5\ 000 + 400 + \boxed{\phantom{000}} + 2$

In the number 34 567 there are:

- 3     ten thousands
- 4     thousands
- 5     hundreds
- 6     tens and
- 7     units

I think I get it!



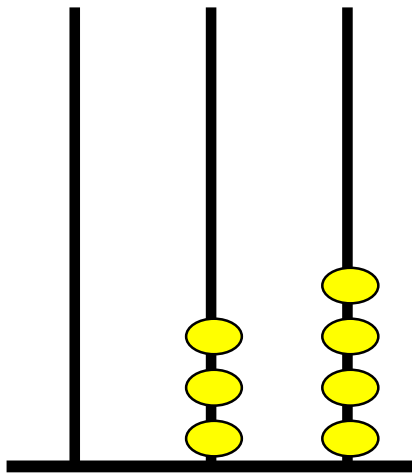
6. How many ten thousands are there in 56 976 ?

7. How many ten thousands are there in 47 666?

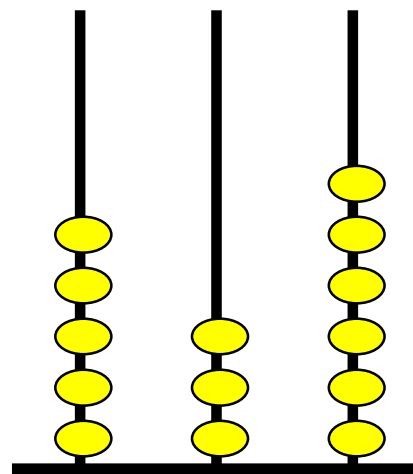
8. What is the value of the 9 in 83 908 ?

9. What is the value of the 1 in 47 419 ?

10. What is the value of the 2 in 205 166 ?

ABACUS WORK

H Th T Th Th



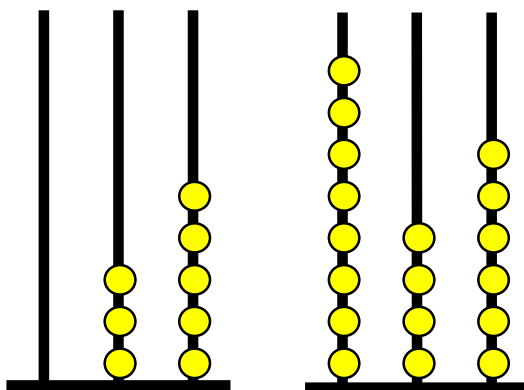
H T U

This abacus shows 3 ten thousands, 4 thousands, 5 hundreds, 3 tens and 6 units.

The number is written 34 536.

In words: thirty four thousand, five hundred and thirty six.

Write down what the abacus shows for this:



T Th Th

H T U

Well, there are  
6 units.....



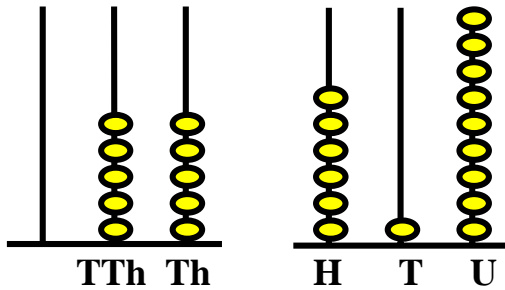


**ABACUS WORK**

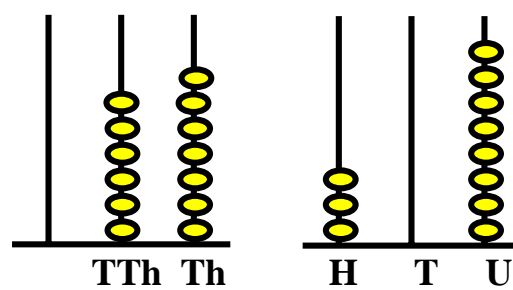
What numbers do these show?

Write the answers **IN FIGURES** and then **IN WORDS**.

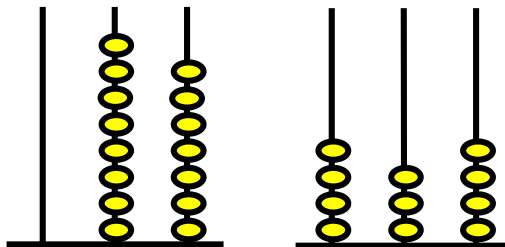
1.



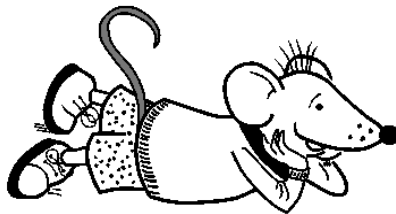
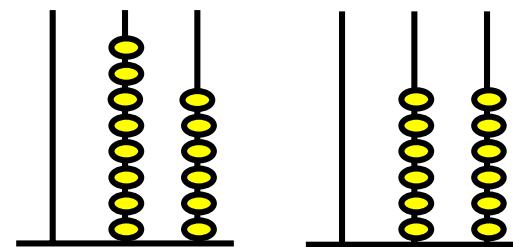
2.



3.

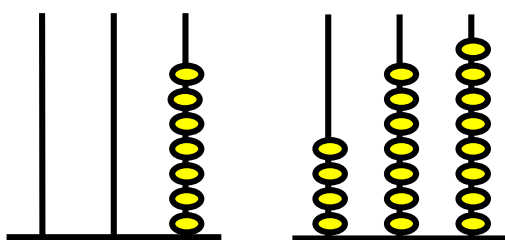


4.

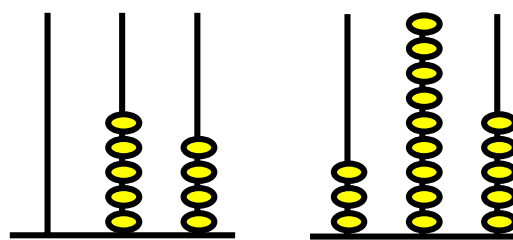


My eyes are hurting  
from all these tens of  
thousands of dots!

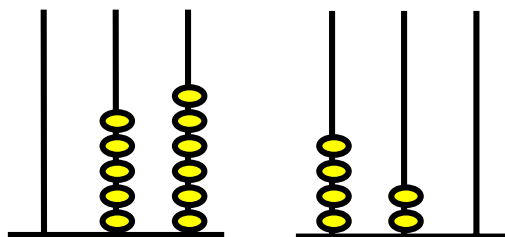
5.



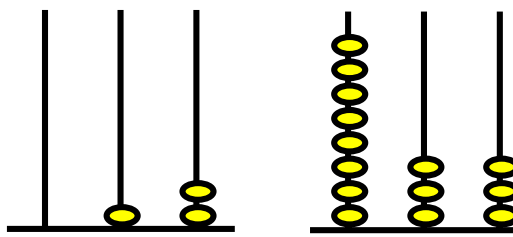
6.



7.



8.



**PLACE VALUE CALCULATOR WORK**

**For each of the following you are only allowed to carry out one operation - this means type in the original number, then type in a number of your choice, a sign and the equals sign - once only!**

1. Change 42 356 to 62 356

2. Change 86 345 to 84 345

3. Change 78 002 to 77992

4. Change 3 478 to 34 780

5. Change 54 789 to 54 389

**Work out the following:**

6. Which is more: 15 tens or 2 hundreds?

7. Which is more: 1 thousand or 15 hundreds?

8. Which is less: 12 hundred or 130 tens?

9. Which is more: 23 thousand or 200 hundreds?

10. Which is less: 5 thousands or 51 hundreds?

**Make the BIGGEST number that you can from the following digits. Write the number down. Then make the SMALLEST possible number. Take the smallest from the largest, using a calculator.**

11. 5, 3, 7, 0

12. 2, 4, 5, 8, 1

13. 9, 1, 4, 6, 0,

14. 4, 3, 4, 3

15. 8, 6, 5, 4, 1

**WRITING LARGER NUMBERS IN WORDS AND FIGURES****Write in figures:**

1. Three hundred and eighty five thousand, two hundred and ninety four.
2. Two hundred and seventy six thousand, five hundred and fifty three.
3. Sixty thousand and forty.
4. Eight million and five.
5. Two million sixty thousand and thirty nine.

**Write in words:**

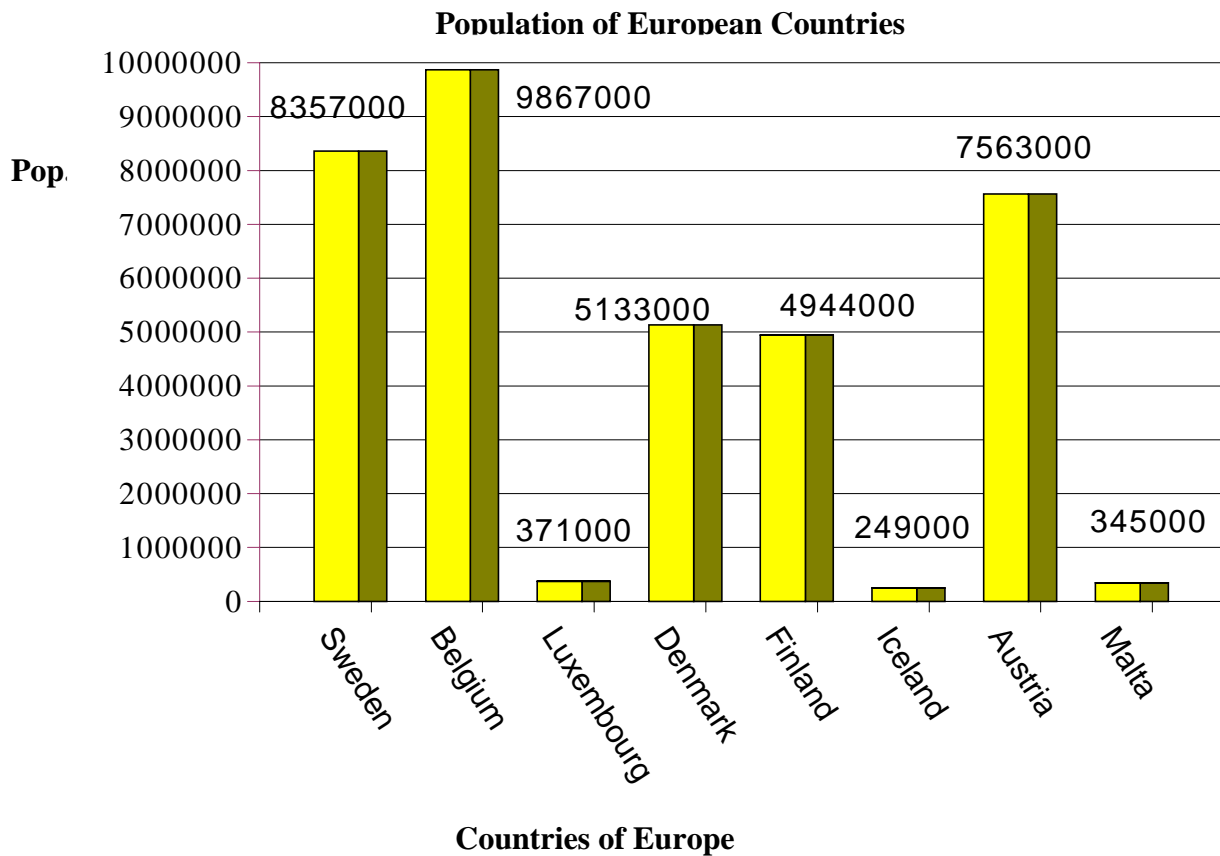
- |                 |               |
|-----------------|---------------|
| 6. 2 000 012    | 7. 308 005    |
| 8. 808 808      | 9. 700 076    |
| 10. 10 076 014  | 11. 444 335   |
| 12. 101 101 101 | 13. 2 020 200 |
| 14. 80 000 000  | 15. 40 444    |

**Write in words these population figures for French cities:**

16. Paris - 8 707 000
17. Lyon - 1 221 000
18. Marseille - 1 111 000
19. Lille - 936 000
20. Bordeaux - 640 000

The French love the Tour de France bike race! Millions watch it each year.





1. List the countries in order, starting with the smallest. Write, in WORDS, the population of each country.

Eg Iceland - two hundred and forty nine thousand.

3. Which countries have a population less than one million?
3. Which country has a population of nearly ten million?
4. Do the total populations for the three smallest countries add up to more than one million?
5. Which country has a population nearest to five million? - Be careful with this answer!

**THE VALUE OF DIGITS**

millions			thousands			units		
h	t	u	h	t	u	h	t	u
4	6	<u>8</u>	3	<u>2</u>	7	5	1	9

The figure 2 in the number 468 327 519 is worth twenty thousand or 20 000.

The figure 8 in the number 468 327 519 is worth eight million or 8 000 000.

1. Write down in words and numbers the value of the figure 7 in 468 327 519.
2. Write down in words and numbers the value of the figure 5 in 468 327 519.
3. Write down in words and numbers the value of the figure 4 in 468 327 519.

millions			thousands			units		
h	t	u	h	t	u	h	t	u
<u>3</u>	0	4	<u>7</u>	5	8	1	<u>2</u>	6

4. In the number 304 758 126 what is the value of the figure 3 ?
5. In the number 304 758 126 what is the value of the figure 7 ?
6. In the number 304 758 126 what is the value of the figure 2 ?

**Write down the value of the figure underlined in each of the following numbers:**

7. 407 834

8. 184 622 309

9. 223 445 667


10. 200 090

These numbers are getting astronomical!



## LARGE NUMBERS - THE PLANETS

Mankind is finding out more and more about the planets, sending craft into space to send back photos and information. But the planets are millions of miles away. Below is a chart showing approximately how far away each planet is.

<u>PLANET</u>	<u>DISTANCE FROM THE SUN</u>	
Mercury	58 000 000 km.	<div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-bottom: 10px;">           Fly me to the moon!            These distances do vary a great deal as the planets orbit the sun.         </div> 
Venus	108 000 000 km	
Earth	150 000 000 km	
Mars	228 000 000 km	
Jupiter	778 000 000 km	
Saturn	1 427 000 000 km	
Uranus	2 870 000 000 km	
Neptune	4 500 000 000 km	
Pluto	5 970 000 000 km	

**Re-write the chart above, putting all distances into words rather than figures.**

*\* Notice that the distances for Saturn, Uranus, Neptune and Pluto are all thousands of millions.*

*This can be written two ways:*

*Either: one thousand, four hundred and twenty seven million*

*or one billion, four hundred and twenty seven million*

*( This can be confusing as a billion is also thought of as a million million. )*

$$534\ 578 = 500\ 000 + 30\ 000 + 4\ 000 + 500 + 70 + 8$$

**What number needs to go in the box in the following statements?**

1.  $647\ 892 = 600\ 000 + 40\ 000 + \boxed{\phantom{00000}} + 800 + 90 + 2$

2.  $34\ 191 = 30\ 000 + 4000 + \boxed{\phantom{000}} + 90 + 1$

3.  $2\ 498\ 352 = \boxed{\phantom{000000}} + 400\ 000 + 90\ 000 + 8\ 000 + 300 + 50 + 2$

4.  $53\ 790 = 50\ 000 + \boxed{\phantom{000}} + 700 + 90$

5.  $399\ 725 = 300\ 000 + 90\ 000 + 9\ 000 + 700 + \boxed{\phantom{000}} + 5$

**Write these in numbers:**

6. Fifty six thousand two hundred and thirty three.

7. Nine hundred thousand and twelve.

8. Forty six thousand three hundred and fifty five.

9. Three hundred million.

10. Forty four thousand and eighty six.

**Write these in words:**

11. 500 000

12. 360 000

13. 2 000 789

14. 2 900 030

15. 30 022

I can do  
these  
standing  
on my  
head -  
just!



**WHAT NUMBERS DO DIGITS REPRESENT?**

**Write down the value of the figure underlined in these numbers:**

1. 390 945

6. 204 560

2. 2 987

7. 78 546

3. 22 375 129

8. 3 199 188

4. 3 444 555 666

9. 99 999

5. 216 000 000

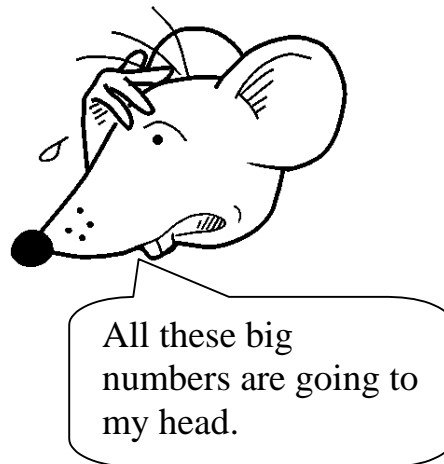
10. 2 000 010

**11.** Make the biggest number you can using these digits: **2 6 3 8 9 1**. Write the number down.

Now make the smallest possible whole number using the same digits. Write this number down.

Subtract the smallest number from the biggest number.  
Work this out on paper.

Show all working out.



**Use a calculator to work out the answers to these sums:**

**12.** Fifty five thousand plus eight hundred thousand and ninety seven.

**13.** Two hundred thousand, nine hundred and ninety plus forty four thousand two hundred and twelve.

**14.** Six million six hundred thousand plus five hundred thousand.

**15.** Six hundred and seventy thousand subtract eighty thousand.

**16.** Twenty two million, four hundred thousand, seven hundred and seventy seven plus nine hundred and ninety nine.



**ANSWERS pages 5 - 10****Page 5**

1. 3 200      2. 26 476      3. 46 000      4. 88 059      5. 53 411      6. 27 020

**Page 6**

1. 5000      2. 5      3. 100      4. 10 000      5. 600  
 6. 40 000      7. 90      8. 70 000      9. 200      10. 6 000  
 11. twenty three thousand, four hundred and fifty six.  
 12. Eighteen thousand, two hundred  
 13. nine thousand nine hundred  
 14. twenty three thousand and four  
 15. sixteen thousand, five hundred

**Page 7**

1. 600      2. 3 000      3. 60 000      4. 8 000      5. 30  
 6. 5      7. 4      8. 900      9. 10      10. 200 000

**Page 8**

1. 35 846    thirty five thousand, eight hundred and forty six

**Page 9**

1. 55 619    fifty five thousand, six hundred and nineteen  
 2. 67 308    sixty seven thousand three hundred and eight  
 3. 87 434    eighty seven thousand four hundred and thirty four  
 4. 86 066    eighty six thousand and sixty six  
 5. 7 478    seven thousand, four hundred and seventy eight  
 6. 54 395    fifty four thousand, three hundred and ninety five  
 7. 56 420    fifty six thousand, four hundred and twenty  
 8. 12 833    twelve thousand, eight hundred and thirty three

**Page 10**

1.  $42\,356 + 20\,000 = 62\,356$       2.  $86\,345 - 2\,000 = 84\,345$   
 3.  $78\,002 - 10 = 77\,992$       4.  $3\,478 \times 10 = 34\,780$   
 5.  $54\,789 - 400 = 54\,389$   
 6. 2 hundreds      7. 15 hundreds  
 8. 12 hundred      9. 23 thousand  
 10. 5 thousand  
 11.  $7\,530 - 0\,357 = 7\,173$       12.  $85\,421 - 12\,458 = 72\,963$   
 13.  $96\,410 - 01\,469 = 94\,941$       14.  $4\,433 - 3\,344 = 1\,089$   
 15.  $86\,541 - 14\,568 = 71\,973$

**ANSWERS p. 11 - 13****Page 11**

- 1) 385 294    2) 276 553    3) 60 040    4) 8 000 005    5) 2 060 039
- 6) two million and twelve
- 7) three hundred and eight thousand and five
- 8) eight hundred and eight thousand eight hundred and eight.
- 9) seven hundred thousand and seventy six
- 10) ten million, seventy six thousand and fourteen.
- 11) four hundred and forty four thousand three hundred and thirty five.
- 12) one hundred and one million, one hundred and one thousand, one hundred and one.
- 13) two million, twenty thousand and two hundred.
- 14) Eighty million
- 15) forty thousand, four hundred and forty four.
- 16) Paris - eight million, seven hundred and seven thousand.
- 17) Lyon - one million, two hundred and twenty one thousand.
- 18) Marseille - one million, one hundred and eleven thousand.
- 19) Lille - nine hundred and thirty six thousand.
- 20) Bordeaux - six hundred and forty thousand.

**Page 12**

- 1) Iceland - two hundred and forty nine thousand  
Malta - three hundred and forty five thousand  
Luxembourg - three hundred and seventy one thousand  
Finland - four million, nine hundred and forty four thousand  
Denmark - five million, one hundred and thirty three thousand  
Austria - seven million, five hundred and sixty three million  
Sweden - eight million, three hundred and fifty seven thousand  
Belgium - nine million, eight hundred and sixty seven thousand.
- 2) Iceland, Malta and Luxembourg    3) Belgium    4) No    5) Finland

**Page 13**

- 1) 7 000 seven thousand    2) 500 five hundred    3) 400 000 000 four hundred million
- 4) 300 000 000 three hundred million    5) 700 000 seven hundred thousand    6) 20 twenty
- 7) 7 000    8) 2 000    9) 400 000    10) 90

**ANSWERS p. 14 - 16****Page 14**

Mercury	fifty eight million km
Venus	one hundred and eight million km
Earth	one hundred and fifty million km
Mars	two hundred and twenty eight million km
Jupiter	seven hundred and seventy eight million km
Saturn	one billion, four hundred and twenty seven million km
Uranus	two billion, eight hundred and seventy million km
Neptune	four billion, five hundred million km
Pluto	five billion, nine hundred and seventy million km.

**Page 15**

- 1) 7 000                      2) 100                      3) 2 000 000                      4) 3 000                      5) 20  
6) 56 233                      7) 900 012                      8) 46 355                      9) 300 000 000                      10) 44 086  
11) five hundred thousand  
12) three hundred and sixty thousand  
13) two million, seven hundred and eighty nine  
14) two million, nine hundred thousand and thirty  
15) thirty thousand and twenty two

**Page 16**

- 1) 40                      2) 900                      3) 2 000 000                      4) 3 000 000 000                      5) 10 000 000  
6) 200 000                      7) 8 000                      8) 100 000                      9) 900                      10) 10  
11) 986 321                      123 689                      862 632  
12) 855 097                      13) 245 202                      14) 7 100 000                      15) 590 000                      16) 22 401 776


**11 238**

**65 489**

**76 590**

**24 803**

**83 240**