## Unit 1

Number Sense

## Topic A: Emotions and Learning

Emotions, or what we feel about something, play a big part in how we learn. If we are calm, we learn well. If we are afraid or stressed, we do not learn as well.

Math anxiety or the fear of math is a learned habit. If it is learned, it can be unlearned. Most math anxiety comes from bad memories while learning math.

Everyone can learn math. There is no special talent for math. There are some people who are better at math than others, but even these people had to learn to be good at math.

People who are good at math have learned some good skills to help them learn math. One good skill is to know your textbook.

## Know Your Textbook

Look at the Table of Contents in the front of your textbook. It tells you what you will be learning. You can see some things that you already know, some things that you may have forgotten and some things that are new to you.

Flip the pages. You can see that the textbook is split into units. Each unit is something to learn.

Each unit has exercises to do. Notice the answers are at the end of the exercise. You can check your answers as soon as you are done. You can also check your answer before moving on if are not sure if you are doing the question right.

At the end of each unit is a self-test. It is a chance for you to see how well you have learned the skills in the unit. If you do well, you can move on. If you don't do well, you can go back and practice those skills.

Knowing your textbook gives you a good skill. If you get frustrated, you can use the Table of Contents to go back and find some help.

## How to Deal with Math Anxiety

Anyone can feel anxiety that will slow down learning. The key to learning is to be the "boss" of your anxiety.

One way to be the "boss" is to relax. Try this breathing exercise.
Start by breathing in slowly to the count of four. It may help to close your eyes and count. Now hold your breath for four counts and then let your breath out slowly to the count of four. The counting is silent and should follow this pattern: "breathe in, two, three four; hold, two, three, four; breathe out, two, three, four; wait, two, three four." With practice, the number of counts can be increased. This is an easy and good way to relax.

Now try this exercise quietly and repeat it five times slowly.
Each time you feel anxious about learning, use the breathing exercise to help calm yourself. Ask yourself if what you tried worked. Do you feel calmer?

Remember learning to deal with your math anxiety may take some time. It took you a long time to learn "math anxiety", so it will take some time to overcome it.

## Topic B：Place Value

Each place in a number has a value．
－The ones place tells how many ones there are．
3 means 3 ones

9 is the largest amount that we can express（write or say）with one digit．
－The tens place shows how many tens there are．The ones place must have a digit in it before there can be a digit in the tens place．

Every ten is ten ones．


43 means 4 tens and 3 ones


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99 means 9 tens and 9 ones． 99 is the largest amount that we can express （write or say）using only two digits．

The place to the left of the tens place is the hundreds place．It shows how many hundreds there are．A number written using three whole digits has a hundreds place，a tens place，and a ones place．

Every hundred is ten tens - every hundred is the same as one hundred ones.


425 means 4 hundreds, 2 tens, and 5 ones.


The place to the left of the hundreds place is the thousands place.

One thousand is the same as ten hundreds.


One thousand is the same as one hundred tens.


One thousand is the same as one thousand ones. (You will have to imagine the picture of the one thousand ones!)

When we write numerals, a little space is left between the thousands place and the hundreds place. The space makes it easier to read large numerals.

$$
4392 \quad 8253 \quad 23693
$$

Large numerals used to be written with a comma (,) instead of a space and you may still see numerals like this: $\quad 4,392 \quad 8,253 \quad 23,693$

Learn to use the space instead of a comma because that is the preferred style.

2212 means 2 thousands, 2 hundreds, 1 ten, and 2 ones


3064 means 3 thousands, 0 hundreds, 6 tens, and 4 ones


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What happens if the 0 is not written to hold the hundreds place？
The numerals would then be 364 which stands for the number 3 hundreds， 6 tens，and 4 ones．



364 is not the same as 3064 ．

## Exercise One

Fill in the blanks to make each sentence true．Draw a sketch if you wish．Check your work using the answer key at the end of the exercise．

| a） | $8261=$ | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: |
| b） | $4005=$ | thousands | hundreds | tens | ones |
| c） | $2931=$ | thousands | hundreds | tens | ones |
| d） | 1034 ＝ | thousands | hundreds | tens | ones |
| e） | $2608=$ | thousands | hundreds | tens | ones |
| f） | 7543 ＝ | thousands | hundreds | tens | ones |
| g） | $2900=$ | thousands | hundreds | tens | ones |

## Answers to Exercise One

a) 8 thousands, 2 hundreds, 6 tens, 1 ones
b) 4 thousands, 0 hundreds, 0 tens, 5 ones
c) 2 thousands, 9 hundreds, 3 tens, 1 one
d) 1 thousand, 0 hundreds, 3 tens, 4 ones
e) 2 thousands, 6 hundreds, 0 tens, 8 ones
f) 7 thousands, 5 hundreds, 4 tens, 3 ones
g) 2 thousands, 9 hundreds, 0 tens 0 ones

The place value to the left of thousands is ten thousands. As you can tell by the name, one ten thousand is ten thousands. You are not going to get a sketch of these large place values because the page isn't big enough!
$43692=4$ ten thousands, 3 thousands, 6 hundreds, 9 tens, and 2 ones

43692 can also be thought of as 43 thousands, 6 hundreds, 9 tens, and 2 ones.

## Exercise Two

Fill in the blanks. Check your work using the answer key at the end of the exercise.
a)

|  | ten thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{8 0 3 0 0}$ | $\mathbf{8}$ | $\mathbf{0}$ | $\mathbf{3}$ | $\mathbf{0}$ | $\mathbf{0}$ |
| $\mathbf{O R}$ |  | $\mathbf{8 0}$ | $\mathbf{3}$ | $\mathbf{0}$ | $\mathbf{0}$ |

b)

|  | ten thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 36981 |  |  |  |  |  |
| OR |  |  |  |  |  |

c)

|  | ten thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 31205 |  |  |  |  |  |
| OR |  |  |  |  |  |

d)

|  | ten thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 99999 |  |  |  |  |  |
| OR |  |  |  |  |  |

e)

|  | ten thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 15002 |  |  |  |  |  |
| $\mathbf{O R}$ |  |  |  |  |  |

f)

|  | ten thousands | thousands | hundreds | tens | ones |
| :---: | :--- | :--- | :--- | :--- | :--- |
| 75125 |  |  |  |  |  |
| OR |  |  |  |  |  |

## Answers to Exercise Two

b)

|  | ten thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 36981 | $\mathbf{3}$ | $\mathbf{6}$ | $\mathbf{9}$ | $\mathbf{8}$ | $\mathbf{1}$ |
| $\mathbf{O R}$ |  | $\mathbf{3 6}$ | $\mathbf{9}$ | $\mathbf{8}$ | $\mathbf{1}$ |

c)

|  | ten thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 31205 | $\mathbf{3}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{0}$ | $\mathbf{5}$ |
| $\mathbf{O R}$ |  | $\mathbf{3 1}$ | $\mathbf{2}$ | $\mathbf{0}$ | $\mathbf{5}$ |

d)

|  | ten thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 99999 | $\mathbf{9}$ | $\mathbf{9}$ | $\mathbf{9}$ | $\mathbf{9}$ | $\mathbf{9}$ |
| $\mathbf{O R}$ |  | $\mathbf{9 9}$ | $\mathbf{9}$ | $\mathbf{9}$ | $\mathbf{9}$ |

e)

|  | ten thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 15002 | $\mathbf{1}$ | $\mathbf{5}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{2}$ |
| $\mathbf{O R}$ |  | $\mathbf{1 5}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{2}$ |

f)

|  | ten thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 75125 | 7 | 5 | $\mathbf{1}$ | 2 | $\mathbf{5}$ |
| OR |  | 75 | $\mathbf{1}$ | 2 | $\mathbf{5}$ |

Have you heard the expression, "Oh, he has a 6 figure salary!" That means he earns at least one hundred thousand dollars which takes six digits to write! The place value to the left of ten thousands is hundred thousands. There is definitely not room on the page for a picture of this place value! Ten ten thousands makes one hundred thousand.

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 432467 | 4 | 3 | 2 | 4 | 6 | 7 |


|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 803214 | 8 | 0 | 3 | 2 | 1 | 4 |

And if we look one more place to the left, the place value is millions. One million is 1 with six zeros after it. 1000000

A space is left between the millions place and the hundred thousands place.

A space is left between the thousands place and the hundreds place.
2368100
3150213
14263942
5521671

This place value chart may help you to remember the place values.


Notice the groups of three digits. Look at the pattern for the three places which is repeated in each place value group - the pattern is hundreds, tens, ones.

Our number system is called a decimal system because it is based on the number ten. Deci is a Latin word that means ten.

Whole numbers can have a decimal point (a dot) written at the end. Starting with ones, the place values are each ten times greater.

| ones place $=$ | one |
| :--- | :--- |
| tens place $=$ | 10 ones |
| hundreds place $=$ | 10 tens |
| thousands place $=$ | 10 hundreds |
| ten thousands place $=$ | 10 thousands |
| hundred thousands place $=$ | 10 ten thousands |
| millions place $=$ | 10 hundred thousands |
| ten millions place $=$ | 10 millions |
| hundred millions place $=$ | 10 ten millions |

... and so on.

Our number system is very tidy. When you learn to use the metric measurement system you will see the metric system is based on ten just like the number system.

## Exercise Three

Write the place value name for each underlined digit. Check your work using the answer key at the end of the exercise.
a) $2 \underline{3} 206$
thousands
b) $24 \underline{6} 8$
tens
c) $\underline{6} 22$ $\qquad$ d) $\underline{9} 2002$
e) $92 \underline{0} 02$ $\qquad$ f) $142 \underline{6} 2$
g) $\underline{48} 076$ $\qquad$ h) $5 \underline{5} 55$
j) $920 \underline{0} 2$ $\qquad$
i) $1224 \underline{5}$ $\qquad$
$\qquad$
k) $1 \underline{2} 026$ $\qquad$
l) $\underline{6} 348$
$\qquad$
$\qquad$
$\qquad$

## Answers to Exercise Three

a) thousands
b) tens
c) hundreds
d) ten thousands
e) hundreds
f) tens
g) ten thousands
h) hundreds
i) ones
j) tens
k) thousands
l) thousands

## Exercise Four

Underline the digit for the place value named. Check your work using the answer key at the end of the exercise.
a) thousands
416245
b) tens
363482
c) ten thousands
36482
d) hundreds
1456
e) hundred thousands 206415
f) thousands
63421
g) hundreds 74322 h) hundred thousands 685413
i) thousands 221300
j) ten thousands 10000
k) ones
16394
l) tens
684

## Answers to Exercise Four

a) 416245
b) $3634 \underline{8} 2$
c) $\underline{3} 6482$
d) $\mathbf{1} \underline{4} 56$
e) $\underline{2} 06415$
f) 63421
g) $74 \underline{322}$
h) $\quad \underline{6} 85413$
i) 221300
j) 10000
k) $1639 \underline{4}$
l) $6 \underline{8} 4$

## Reading and Writing Numerals

You know that the digits are $\begin{array}{llllllllll}0 & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9\end{array}$ and that digits are arranged in different places so we can count larger amounts than our ten fingers!

When we use digits we call what we write the numeral.

> 328 is a numeral
> 46 is a numeral
> 3 is a numeral

We use numerals to represent numbers.
The numerals from 1 to 12 have special words. These are

| 0 | zero | 7 | seven |
| :--- | :--- | :--- | :--- |
| 1 | one | 8 | eight |
| 2 | two | 9 | nine |
| 3 | three | 10 | ten |
| 4 | four | 11 | eleven |
| 5 | five | 12 | twelve |
| 6 | six |  |  |

The numerals from 13 to 19 are

## 13 thirteen

14 fourteen
15 fifteen
16 sixteen
17 seventeen
18 eighteen
19 nineteen

The word names for the numbers 20 to 90 are

| 20 | twenty |
| :--- | :--- |
| 30 | thirty |
| 40 | forty |
| 50 | fifty |
| 60 | sixty |
| 70 | seventy |
| 80 | eighty |
| 90 | ninety |

The names for the numbers between groups of tens also follow a pattern. The first number tells us how many tens. The second number tells us how many ones.

|  | Tens Ones |  | Tens Ones |  | Tens Ones |
| ---: | :--- | ---: | :--- | ---: | :--- |
| 20 | twenty | 30 | thirty | 40 | forty |
| 21 | twenty-one | 31 | thirty-one | 41 | forty-one |
| 22 | twenty-two | 32 | thirty-two | 42 | forty-two |
| 23 | twenty-three | 33 | thirty-three | 43 | forty-three |
| 24 | twenty-four | 34 | thirty-four | 44 | forty-four |
| 25 | twenty-five | 35 | thirty-five | 45 | forty-five |
| 26 | twenty-six | 36 | thirty-six | 46 | forty-six |
| 27 | twenty-seven | 37 | thirty-seven | 47 | forty-seven |
| 28 | twenty-eight | 38 | thirty-eight | 48 | forty-eight |
| 29 | twenty-nine | 39 | thirty-nine | 49 | forty-nine |

The written names for numbers that have tens and ones are written with a hyphen (-) between them. This pattern with the hyphen continues up to ninety-nine (99).

When we write hundreds in words, we need two words. The first word tells us how many hundreds. The second word tells us we are counting hundreds.

## 200 two hundred

You now know how to write numbers in words up to 999.

| $\mathbf{3 6 7}$ is made of | $\mathbf{3}$ hundreds | $\mathbf{6}$ tens | $\mathbf{7}$ ones |
| :--- | :--- | :--- | :--- |
| Each is written: | three hundred | sixty | seven |
| Put the parts together: | three hundred sixty-seven |  |  |

## Remember:

- hyphen (-) between the tens and units
- no hyphen anywhere else
- no "s" on the hundred
- no 'and" between the hundreds place and the tens place

Here is another example. Watch out for the empty space!

| $\mathbf{5 0 4}$ is made of | $\mathbf{5}$ hundreds | $\mathbf{0}$ tens | $\mathbf{4}$ ones |
| :--- | :--- | :--- | :--- |
| Each is written: | five hundred |  | four |
| Put the parts together: | five hundred four |  |  |

Here is another example. Watch out for the empty space!

| $\mathbf{8 9 0}$ is made of | $\mathbf{8}$ hundreds | $\mathbf{9}$ tens | $\mathbf{0}$ ones |
| :--- | :--- | :--- | :--- |
| Each is written: | eight hundred | ninety |  |
| Put the parts together: | eight hundred ninety |  |  |

Here is another example. Watch out for the empty spaces!

| $\mathbf{1 0 0}$ is made of | $\mathbf{1}$ hundreds | $\mathbf{0}$ tens | $\mathbf{0}$ ones |
| :--- | :--- | :--- | :--- |
| Each is written: | one hundred |  |  |
| Put the parts together: | one hundred |  |  |

Remember: empty spaces are not written in words.

Large numerals are read in the place value groups of three that you noticed in the place value chart. You have been practicing reading numerals with three digits or less. Now practice reading the thousands group.

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{4 2 3} \mathbf{7 9 6}$ is <br> made of | 4 | 2 | 3 | 7 | 9 | 6 |
| Each is <br> written | four hundred twenty-three thousand | seven <br> hundred | ninety | six |  |  |
| Put the parts <br> together | four hundred twenty-three thousand seven hundred ninety-six |  |  |  |  |  |

423796 is four hundred twenty-three thousand seven hundred ninety-six

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2 6} \mathbf{2 0 1}$ is <br> made of |  | 2 | 6 | 2 | 0 | 1 |
| Each is <br> written | twenty-six thousand | two <br> hundred |  | one |  |  |
| Put the parts <br> together | twenty-six thousand two hundred one |  |  |  |  |  |

26201 is twenty-six thousand two hundred one

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{4 0 0 ~ 0 0 0}$ is <br> made of | 4 | 0 | 0 | 0 | 0 | 0 |
| Each is <br> written | four hundred thousand |  |  |  |  |  |
| Put the parts <br> together | four hundred thousand |  |  |  |  |  |

400000 is four hundred thousand

## Exercise Five

Write the word names for the numerals. Check your work using the answer key at the end of the exercise.
a)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{4 9 1 2 0 0}$ is <br> made of |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |
| Put the parts <br> together |  |  |  |  |  |  |

b)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{1 9 6 3 1}$ is <br> made of |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |
| Put the parts <br> together |  |  |  |  |  |  |

c)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{3 0 4} \mathbf{2 1 2}$ is <br> made of |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |
| Put the parts <br> together |  |  |  |  |  |  |

d)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{3 4 2 6}$ is made <br> of |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |
| Put the parts <br> together |  |  |  |  |  |  |

e)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2 1 8 ~ 0 0 0}$ <br> made of |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |
| Put the parts <br> together |  |  |  |  |  |  |

f)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 2 3} \mathbf{0 0 9}$ is <br> made of |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |
| Put the parts <br> together |  |  |  |  |  |  |

g) $\quad 365456$ $\qquad$
h) 299899
i) 456876
j) 923471
k) 53679

## Answers to Exercise Five

a)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{4 9 1} \mathbf{2 0 0}$ is made <br> of | 4 | 9 | 1 | 2 | 0 | 0 |
| Each is written | four hundred ninety-one thousand | two <br> hundred |  |  |  |  |
| Put the parts <br> together | four hundred ninety-one thousand two hundred |  |  |  |  |  |

b)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{1 9} \mathbf{6 3 1}$ is made <br> of | nineteen thousand |  |  |  |  | 9 |
| Each is written | six <br> hundred |  |  |  | thirty | one |
| Put the parts <br> together | nineteen thousand six hundred thirty-one |  |  |  |  |  |

c)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{3 0 4} \mathbf{2 1 2}$ is made <br> of | 3 | 0 | 4 | 2 | 1 | 2 |
| Each is written | three hundred four thousand | two <br> hundred | twelve |  |  |  |
| Put the parts <br> together | three hundred four thousand two hundred twelve |  |  |  |  |  |

d)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{3 4 2 6}$ is made of | three thousand <br> Each is written$\quad$four <br> hundred |  |  |  | twenty | six |
| Put the parts <br> together | three thousand four hundred twenty-six |  |  |  |  |  |

e)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2 1 8} \mathbf{0 0 0}$ is made <br> of | 2 | 1 | 8 | 0 | 0 | 0 |
| Each is written | two hundred eighteen thousand |  |  |  |  |  |
| Put the parts <br> together | two hundred eighteen thousand |  |  |  |  |  |

f)

|  | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 2 3} \mathbf{0 0 9}$ is made <br> of | 6 | 2 | 3 | 0 | 0 | 9 |
| Each is written | six hundred twenty-three thousand |  | nine |  |  |  |
| Put the parts <br> together | six hundred twenty-three thousand nine |  |  |  |  |  |

g) three hundred sixty-five thousand four hundred fifty-six
h) two hundred ninety-nine thousand eight hundred ninety-nine
i) four hundred fifty-six thousand eight hundred seventy-six
j) nine hundred twenty-three thousand four hundred seventy-one
k) fifty-three thousand six hundred seventy-nine

Now, just for fun, take a look at these very large numerals. Say "million" for the group to the left of the thousands group.

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2} \mathbf{6 4 3} \mathbf{1 8 2}$ <br> is made of | 2 | 6 | 4 | 3 | 1 | 8 | 2 |
| Each is <br> written | two <br> million | six hundred forty-three thousand | one <br> hundred | eighty | two |  |  |
| Put the <br> parts <br> together | two million six hundred forty-three thousand one hundred eighty-two |  |  |  |  |  |  |


|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 5 1 0} \mathbf{2 3 1}$ <br> is made of | 6 | 5 | 1 | 0 | 2 | 3 | 1 |
| Each is <br> written | six <br> million | five hundred ten thousand | two <br> hundred | thirty | one |  |  |
| Put the <br> parts <br> together | six million five hundred ten thousand two hundred thirty-one |  |  |  |  |  |  |

## Exercise Six

Write the word names for the numerals. Check your work using the answer key at the end of the exercise.
a)

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2 8 5 1} \mathbf{8 3 4}$ <br> is made of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Put the <br> parts <br> together |  |  |  |  |  |  |  |

b)

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{3 1 8 6} \mathbf{6 6 2}$ <br> is made of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Put the <br> parts <br> together |  |  |  |  |  |  |  |

c)

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{8 2 8 3} \mathbf{4 5 0}$ <br> is made of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Put the <br> parts <br> together |  |  |  |  |  |  |  |

d)

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2 3 4 5} \mathbf{3 0 9}$ <br> is made of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Put the <br> parts <br> together |  |  |  |  |  |  |  |

e) 9276403 $\qquad$
f) 3916875 $\qquad$
g) 4873519 $\qquad$

## Answers to Exercise Six <br> a)

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2 8 5 1} \mathbf{2 3 4}$ is <br> made of | 2 | 8 | 5 | 1 | 2 | 3 | 4 |
| Each is <br> written | two <br> million | eight hundred fifty-one thousand | two hundred | thirty | four |  |  |
| Put the parts <br> together | two million eight hundred fifty-one thousand two hundred thirty-four |  |  |  |  |  |  |

b)

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{3 1 8 6} \mathbf{6 6 2}$ is <br> made of | 3 | 1 | 8 | 6 | 6 | 6 | 2 |
| Each is <br> written | three <br> million | one hundred eighty-six thousand | six hundred | sixty | two |  |  |
| Put the parts <br> together |  |  |  |  |  |  |  |

c)

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{8 2 8 3} \mathbf{4 5 0}$ is <br> made of | 8 | 2 | 8 | 3 | 4 | 5 | 0 |
| Each is <br> written | eight <br> million | two hundred eighty-three thousand | four hundred | fifty |  |  |  |
| Put the parts <br> together | eight million two hundred eighty-three thousand four hundred fifty |  |  |  |  |  |  |

d)

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2} \mathbf{3 4 5} \mathbf{4 0 9}$ is <br> made of | 2 | 3 | 4 | 5 | 4 | 0 | 9 |
| Each is <br> written | two <br> million | three hundred forty-five thousand | four hundred | nine |  |  |  |
| Put the parts <br> together | two million three hundred forty-five thousand four hundred nine |  |  |  |  |  |  |

e) nine million two hundred seventy-six thousand four hundred three
f) three million nine hundred sixteen thousand eight hundred seventy-five
g) four million eight hundred seventy-three thousand five hundred nineteen

Work on reading these numerals with someone else and then ask your instructor to listen as you read them.

| 241962107 | 483450 |
| ---: | ---: |
| 27800 | 2345409 |
| 164231 | 260164342 |
| 138000 | 410623 |
| 912050 | 24900 |
| 227695 | 105576 |

Exercise Seven
Now practice writing numerals from number names. Check your work using the answer key at the end of the exercise.
a) Eight hundred twenty-three thousand nine hundred forty-one

|  | eight hundred twenty-three thousand |  |  | nine hundred forty-one |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  | 8 | 2 | 3 | 9 | 4 | 1 |
| 823941 |  |  |  |  |  |  |

b) Three million four hundred eighty-one thousand five hundred sixty-seven

| three million | four hundred eighty-one thousand |  |  | five hundred sixtyseven |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
| 3 | 4 | 8 | 1 | 5 | 6 | 7 |
| 3481567 |  |  |  |  |  |  |

c) two hundred seventy-six thousand five hundred eight

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  |  |  |  |  |  |  |

d) One million six hundred fifty-eight thousand three hundred twenty-five

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

e) four million eight hundred sixteen thousand two hundred thirty-two

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  |  |  |  |  |  |  |

f) six hundred twenty thousand four hundred thirty-nine

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

g) twenty-five thousand five hundred seventy-four

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

h) nine million one hundred sixty-three thousand two hundred fifteen

|  |  |  |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

i) eighty-six thousand, three hundred sixty-eight

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  |  |  |  |  |  |  |

j) seven million twenty-six thousand five hundred eighteen

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  |  |  |  |  |  |  |

k) six million two hundred nineteen thousand three hundred forty-five

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  |  |  |  |  |  |  |

l) two hundred seventy-nine thousand two hundred sixty-one

|  |  |  |  |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

m) four million one hundred seventy thousand three hundred eight

|  |  |  |  |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

n) nine million five hundred eighty-two thousand sixty-five

|  |  |  |  |  |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

## Answers to Exercise Seven

c) two hundred seventy-six thousand five hundred eight

|  | two hundred seventy-six thousand |  | five hundred eight |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  | 2 | 7 | 6 | 5 | 0 | 8 |
|  | 276508 |  |  |  |  |  |

d) One million six hundred fifty-eight thousand three hundred twenty-five

| one million | six hundred fifty-eight thousand |  | three hundred twenty-five |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
| 1 | 6 | 5 | 8 | 3 | 2 | 5 |
| 165325 |  |  |  |  |  |  |

e) four million eight hundred sixteen thousand two hundred thirty-two

| four million | eight hundred sixteen thousand |  | two hundred thirty-two |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
| 4 | 8 | 1 | 6 | 2 | 3 | 2 |
| 4816232 |  |  |  |  |  |  |

f) six hundred twenty thousand four hundred thirty-nine

|  | six hundred twenty thousand |  |  | four hundred thirty-nine |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  | 6 | 2 | 0 | 4 | 3 | 9 |
|  | 620439 |  |  |  |  |  |

g) twenty-five thousand five hundred seventy-four

|  | twenty-five thousand |  |  | five hundred seventy-four |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  |  | 2 | 5 | 5 | 7 | 4 |
|  | 25574 |  |  |  |  |  |

h) nine million one hundred sixty-three thousand two hundred fifteen

| nine million | one hundred sixty-three thousand |  | two hundred fifteen |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
| 9 | 1 | 6 | 3 | 2 | 1 | 5 |
| 9 | 9163215 |  |  |  |  |  |

i) eighty-six thousand, three hundred sixty-eight

|  | eighty-six thousand |  |  | three hundred sixty-eight |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  | $\mathbf{8}$ | 6 | 3 | 6 | 8 |  |
|  | 86368 | 6 |  |  |  |  |

j) seven million twenty-six thousand five hundred eighteen

| seven million | twenty-six thousand |  | five hundred eighteen |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
| 7 | 0 | 2 | 6 | 5 | 1 | 8 |
| 7 | 7026518 |  |  |  |  |  |

k) six million two hundred nineteen thousand three hundred forty-five

| six million | two hundred nineteen thousand |  | three hundred forty-five |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
| 6 | 2 | 1 | 9 | 3 | 4 | 5 |
| 6 | 6219345 |  |  |  |  |  |

l) two hundred seventy-nine thousand two hundred sixty-one

|  | two hundred seventy-nine thousand |  | two hundred sixty-one |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
|  | 2 | 7 | 9 | 2 | 6 | 1 |


| four million | one hundred seventy thousand |  |  | three hundred eight |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
| 4 | 1 | 7 | 0 | 3 | 0 | 8 |
| 4170308 |  |  |  |  |  |  |
| n) nine million five hundred eighty-two thousand sixty-five |  |  |  |  |  |  |
| nine million | five hundred eighty-two thousand |  |  | sixty-five |  |  |
| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
| 9 | 5 | 8 | 2 | 0 | 6 | 5 |
| 9582065 |  |  |  |  |  |  |

Write the number in each of the word problems. Check your work using the answer key at the end of the exercise.
a) The Nile River in Africa is the longest river in the world. It is two thousand five hundred sixty-nine kilometers long. Write the number.
b) Canada shares a border with the United States that is eight thousand eight hundred ninety-three kilometers long. Write the number.
c) The distance around the Earth is forty thousand seventy-six kilometers. Write the number.
d) The population of British Columbia in 2009 was four million four hundred fifty-five thousand two hundred seven. Write the number.
e) The population of Canada in 1891 was three million two hundred thirty thousand. Write the number.
f) The distance from Beijing, China to Vancouver is eight thousand five hundred thirtysix kilometers. Write the number.
g) The distance from Toronto, Ontario to Victoria is four thousand five hundred fiftyeight kilometers. Write the number.
h) The distance from Halifax, Nova Scotia to Vancouver is six thousand one hundred nineteen kilometers. Write the number.

## Answers to Exercise Eight

a) 2569 kilometers
b) 8893 kilometers
c) 40076 kilometers
d) 4455207 people
e) 3230000 people
f) 8536 kilometers
g) 4558 kilometers
h) 6119 kilometers
A. Write the place value for the underlined digit.

6 marks
a) $87 \underline{6} 5$
b) $93 \underline{0}$ $\qquad$
c) $\underline{47932}$
d) $8 \underline{5} 421$ $\qquad$
e) $\underline{2} 79673$ $\qquad$ f) $\underline{3} 97$ $\qquad$
B. Write the word names for these numerals.

6 marks
a) 59
b) 942
c) 7378 $\qquad$
d) 8200 $\qquad$
e) 4005 $\qquad$
f) 58310 $\qquad$
C. Write the numerals for these word names.

5 marks
a) eight hundred forty-seven
b) four thousand three hundred eighty $\qquad$
c) two hundred seventy-five thousand eighty-seven $\qquad$
d) sixty thousand four hundred sixteen
e) fifteen thousand twenty

## Answers to Topic B Self-Test

A.
a) tens
b) ones
c) ten thousands
d) thousands
e) hundred thousands
f) hundreds
B.
a) fifty-nine
b) nine hundred forty-two
c) seven thousand three hundred seventy-eight
d) eight thousand two hundred
e) four thousand five
f) fifty-eight thousand three hundred ten
C.
a) 847
b) 4380
c) 275087
d) 60416
e) 15020

## Topic C: Expanded Form

When we write a number in expanded form, each digit is written with its place value.

## Example:

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :--- | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{5 9 8}$ is <br> made of |  |  |  |  | 5 | 9 | 8 |
| Each is <br> written |  |  | 500 | 90 | 8 |  |  |
| Expanded <br> form | $\mathbf{5 0 0}+\mathbf{9 0}+\mathbf{8}$ |  |  |  |  |  |  |

## Example:

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{1 0 6 8}$ is <br> made of |  |  |  | 1 | 0 | 6 | 8 |
| Each is <br> written |  |  |  | 1000 |  | 60 | 8 |
| Expanded <br> form | $\mathbf{1 0 0 0}+\mathbf{3 0 0}+\mathbf{6 0}+\mathbf{8}$ |  |  |  |  |  |  |

## Example:

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2 4 3} \mathbf{6 9 0}$ <br> is made of |  | 2 | 4 | 3 | 6 | 9 | 0 |
| Each is <br> written |  | 200000 | 40000 | 3000 | 600 | 90 | 0 |
| Expanded <br> form | $\mathbf{2 0 0 0 0 0}+\mathbf{4 0 0 0 0}+\mathbf{3 0 0 0}+\mathbf{6 0 0}+\mathbf{9 0}$ |  |  |  |  |  |  |

## Exercise One

Write each number in expanded form. Check your work using the answer key at the end of the exercise.
a) 329

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{3 2 9}$ is <br> made of |  |  |  |  | 3 | 2 | 9 |
| Each is <br> written |  |  |  |  | 300 | 20 | 9 |
| Expanded <br> form | $\mathbf{3 0 0}+\mathbf{2 0}+\mathbf{9}$ |  |  |  |  |  |  |

b) 762

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| is made <br> of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Expanded <br> form |  |  |  |  |  |  |  |

c) 1847

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| is made <br> of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Expanded <br> form |  |  |  |  |  |  |  |

d) 6301

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{6 3 0 1}$ is <br> made of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Expanded <br> form |  |  |  |  |  |  |  |

e) 16492

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :--- | :--- | :--- | :--- |
| $\mathbf{1 6 ~ 4 9 2 ~ i s ~}$ <br> made of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Expanded <br> form |  |  |  |  |  |  |  |

f) 74296

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :--- | :--- | :--- |
| $\mathbf{7 4} \mathbf{2 9 6}$ is <br> made of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Expanded <br> form |  |  |  |  |  |  |  |

g) 378403

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{3 7 8} \mathbf{4 0 3}$ is <br> made of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Expanded <br> form |  |  |  |  |  |  |  |

h) 721834

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{7 2 1 8 3 4}$ is <br> made of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Expanded <br> form |  |  |  |  |  |  |  |

i) 3816450

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{3 8 1 6} \mathbf{8 5 0}$ <br> is made of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Expanded <br> form |  |  |  |  |  |  |  |

```
j) 2941678
```

|  | millions | hundred <br> thousands | ten <br> thousands | thousands | hundreds | tens | ones |
| :--- | :--- | :---: | :---: | :--- | :--- | :--- | :--- |
| $\mathbf{2 9 4 1} \mathbf{9 7 8}$ <br> is made of |  |  |  |  |  |  |  |
| Each is <br> written |  |  |  |  |  |  |  |
| Expanded <br> form |  |  |  |  |  |  |  |

## Answers to Exercise One

a) $300+20+9$
b) $700+60+2$
c) $1000+800+40+7$
d) $6000+300+1$
e) $10000+6000+400+90+2$
f) $70000+4000+200+90+6$
g) $300000+70000+8000+400+3$
h) $700000+20000+1000+800+30+4$
i) $3000000+800000+10000+6000+400+50$
j) $2000000+900000+40000+1000+600+70+8$

## Exercise Two

Write each number from expanded form. Check your work using the answer key at the end of the exercise.

Example: $600+30+7=637$

Example: $7000+500+40+1=7541$

Example: $4000000+600000+70000+8000+900+3=4678903$
a) $400+10+6=$
b) $500+40+2=$
c) $5000+600+10+8=$
d) $4000+100+40+5=$
e) $20000+1000+800+10+2=$
f) $40000+200+5=$
g) $30000+4000+50+3=$
h) $200000+50000+3000+400+80+3=$
i) $300000+50000+6000+700+10+9=$
j) $1000000+400000+20000+3000+600+50+7=$

## Answers to Exercise Two

a) 416
b) 542
c) 5618
d) 4145
e) 21812
f) 40205
g) 34053
h) 253483
i) 356719
j) 1423657
A. Write each number in expanded form.
6 marks
a) 643
b) 759
c) 4821
d) 94205
e) 367542
f) 1850643

## B. Write each number from its expanded form.

a) $300+60+9=$
b) $700+5=$
c) $1000+400+90+1=$
d) $20000+1000+500+80+4=$
e) $500000+40000+2000+700+30+9=$
f) $3000000+900000+60000+8000+400+30+1=$

## Answers to Topic C Self-Test

A.
a) $600+40+3$
b) $700+50+9$
c) $4000+800+20+1$
d) $90000+4000+200+5$
e) $30000+60000+7000+500+40+2$
f) $1000000+800000+50000+600+40+3$
B.
a) 369
b) 705
c) 1491
d) 21584
e) 542739
f) 3968431

## Topic D: Ordering Numerals

In this topic you will learn to arrange numerals in order from smallest to largest. Sorting numbered papers such as order forms, arranging items by the date and comparing prices are examples of the ways you use this skill. First look at pairs of numerals. Look at two numerals and tell which one is larger. How do you do this?

## Exercise One

Draw a box around the larger number in each pair.
a) $431 \quad 484$
b) 267
251
c) 684
693
d) $274 \quad 315$
e) 932
895
f) 792
810
b) 267
c) 693
d) 315
e) 932
f) 810

To compare numerals, look at the place with the largest value.

Example A: Compare 1628 and 1599.

- thousands are the same.
- hundreds 1628 has 6 hundreds. 1599 has 5 hundreds.
1628 is larger than 1599.

Example B: Compare 13562 and 13612

- ten thousands are the same
- thousands are the same
- hundreds

13562 has 5 hundreds
13612 has 6 hundreds
13612 is larger than 13562.

Example C: Compare 673234 and 673423

- hundred thousands are the same
- ten thousands are the same
- thousands are the same
- hundreds 673234 has 2 hundreds 673423 has 4 hundreds

Note: Numerals with one digit are always less than numerals with two digits.
Numerals with two digits are always less than numerals with three digits, and so on.

9 is less than 15
87 is less than 107
999 is less than 1001

## Exercise Two

Draw a box around the larger numeral in each pair. Check your work using the answer key at the end of the exercise.
a) $\mathbf{1 0 1 6}$
1316
b) 1229
1329
c) 5230
5210
d) 2151
2159
e) $83476 \quad 93475$
f) $31276 \quad 31576$
g) $46821 \quad 46801$
h) 343
3740
i) 8325
8236
j) $11278 \quad 1325$
k) 4289
4230
l) 13471
13422
m) $31476 \quad 32502$
n) 876
2319
o) 5618
8234

## Answers to Exercise Two

b) 1329
c) 5230
d) 2159
e) 93475
f) 31576
g) 46821
h) 3740
i) 8325
j) 11278
k) 4289
l) 13471
m) 32502
n) 2319
o) 8234

Now use the same ideas to arrange more than two numerals in order.
For example, to arrange 6, 616, 1, 66, 666, 61, and 16 in order from smallest to largest, use the following method:

- First, sort the numerals with the same number of digits into groups.

$$
6,1 \quad 66,16,61 \quad \text { and } \quad 616,666
$$

- The group of one digit numerals contains 6 and 1 . As 1 is smaller than 6 , the list starts with 1 , then 6.
- The group of two-digit numerals contains 66,61 , and 16 . Use your skills in ordering numerals to see that 16 is smallest, then 61 , and 66 is the largest of this group. The list now reads, $1,6,16,61,66$.
- Finally, look at the three-digit numerals, 616 and 666 . As 616 is smaller than 666, it will come first. The list now reads:

1, 6, 16, 61, 66, 616, 666.

## Exercise Three

Arrange these numbers in order from smallest to largest. Check your work using the answer key at the end of the exercise.
a) 1235
1352
1523
1253
$\qquad$
b) 47259
$42759 \quad 45279$
47592
c) $73050 \quad 76940 \quad 79053 \quad 73502$
d) $456719 \quad 465981 \quad 546423 \quad 564082$
$\qquad$
e) $12546 \quad 5781 \quad 423 \quad 172901$
$\qquad$
f) $\begin{array}{lllll}114444 & 444 & 14 & 114444\end{array}$
g) 777

17
71
7177
717
77177

## Answers to Exercise Three

a) $1235,1253,1352,1523$
e) 423, $5781,12546,172901$
b) $42759,45279,47259,47592$
f) $14,44,444,114444,1114444$
c) $73050,73502,76940,79053$
g) $17,71,717,777,7177,77177$
d) $456719,465981,546423,564082$

## Greater Than, Less Than, Equal

The sign < means is less than (smaller than).
The sign > means is greater than (bigger than).

The greater than and less than signs always point to the smaller number (that is, the small part of the sign is close to the small number.)

$$
\begin{array}{ll}
5<12 & 5 \text { is less than } 12 \\
6>3 & 6 \text { is greater than } 3
\end{array}
$$

The sign = means equals and is used when two amounts are the same.

The sign $\neq$ means not equal to and is used when two amounts are not the same.

## Exercise Four Write $<$, $>$, or = in each blank as needed. Check your work

 using the answer key at the end of the exercise.a) 4376 12376
b) 342981 $\qquad$ 324762
c) 1520 $\qquad$ 1530
d) 5821 $\qquad$ 5821
e) 3674 $\qquad$ 3296
f) 6214 $\qquad$ 6251
g) 14879 $\qquad$ 14900
h) 78432 $\qquad$ 78429
i) 45823 $\qquad$ 54781
j) 732591 $\qquad$ 732950

## Answers to Exercise Four

a) $<$
b) >
c) $<$
d) $=$
e) $>$
f) <
g) <
h) >
i) <
j) <

## A. Box the larger number of each pair.

a) $9784 \quad 7892$
b) 56663
56566
c) $13204 \quad 14420$
d) $721011 \quad 721101$
e) $461300 \quad 416003$
f) $2879921 \quad 2987721$
B. Arrange these numerals in order from smallest to largest.

2 marks
a) 75
754
475
47
5747
5774
77575
b) 18
23070
429
7824
37
994
1120
C. Write >, <. or = in each blank to make a true statement.

4 marks
a) 3678 $\qquad$ 3768
b) 14002 $\qquad$ 14000
c) 38463 $\qquad$ 3846
d) 10010 $\qquad$ 10010

## Answers to Topic D: Self-Test

A.
a) 9784
b) 56663
c) 14420
d) 721101
e) 461300
f) 2987721
B.
a) $47,75,475,754,5747,5774,77575$
b) $18,37,429,994,1120,7824,23070$
C.
a) <
b) $>$
c) $>$
d) $=$

## Topic E: Rounding Numbers

We use numbers a lot in our everyday lives. List some of the ways you use numbers.
$\qquad$
$\qquad$
$\qquad$

You may have written money, shopping, time, and counting as part of your answer.
Think about time. Let's say it takes eight minutes to walk to the bus. If someone asks you how long it takes, you will probably say, "About ten minutes."

If you buy a sweater that cost $\$ 29$, you may say, "Oh, it was around thirty dollars."

How far is it from Vancouver to Prince George? The map says 796 km , but we would probably say, "About 800 kilometres."

You have just read examples of rounding numbers.

We round numbers for many reasons:

- We may not know the exact number.
- The exact number may not be important for what we are doing.
- We may need a quick way to figure something out.

When you are rounding numbers, use zeros to hold the places at the end of the number. Work through the following examples and exercises carefully. Rounding is an important skill.

## Rounding to the Nearest Hundred

A number rounded to the nearest hundred will have zeros in the ones place and in the tens place. The number will end with $000,100,200,300,400,500,600,700,800$, or 900.

When rounding to the nearest 100, we are looking for the closest group of 100 .
Example: 200, 220 and 300.

200


220


䕎

300


Is 220 closer to 200 or 300 ? It is closer to 200 .

Which gives a better estimate of 220 ... 2 hundreds or 3 hundreds? 2 hundreds If we round 220 to nearest hundred, the result would be 200.

Remember: The rounded number has zeroes in the tens and ones places.

## Example: $\quad 300,348$ and 400.

300


348


400


Is 348 closer to 300 or 400 ? It is closest to $\mathbf{3 0 0}$.
Which gives a better estimate of 348 .... 3 hundreds or 4 hundreds? 3 hundreds
If we round 348 to the nearest 100 , the result would be $\mathbf{3 0 0}$.
Remember: The rounded number has zeroes in the tens and ones places.


650


700


Is 650 closer to 600 or 700? It is closer to $\mathbf{7 0 0}$.

Which gives a better estimate of $650 \ldots . .6$ hundreds or 7 hundreds? 7 hundreds.

If we round 650 to the nearest hundred, the result would be $\mathbf{7 0 0}$.
When we round a number which has a 5 in the tens place, we always round up to the next hundred.

If we round 650 to nearest hundred, the result would be 700 .
Example: Round 584 to the nearest 100.
584 is between $\quad 5$ hundreds and ___6 hundreds.
584 is closer to _ 6 hundreds.
Rounded number is $\qquad$ 600 . using the answer key at the end of the exercise.
a) $\mathbf{2 3 2}$ is between $\qquad$ hundreds and $\qquad$ hundreds. 232 is closest to $\qquad$ hundreds.

Rounded number is $\qquad$ .
b) 647 is between $\qquad$ hundreds and $\qquad$ hundreds.

647 is closest to $\qquad$ hundreds.

Rounded number is $\qquad$ .
c) $\mathbf{8 8 1}$ is between $\qquad$ hundreds and $\qquad$ hundreds.

881 is closest to $\qquad$ hundreds.

Rounded number is $\qquad$ .
d) $\mathbf{1 5 2}$ is between $\qquad$ hundreds and $\qquad$ hundreds.

152 is closest to $\qquad$ hundreds.

Rounded number is $\qquad$ .
e) 326 is between $\qquad$ hundreds and $\qquad$ hundreds.

326 is closest to $\qquad$ hundreds.

Rounded number is $\qquad$ .
f) 274 is between $\qquad$ hundreds and $\qquad$ hundreds.

274 is closest to $\qquad$ hundreds.

Rounded number is $\qquad$ .
g) 550 is between $\qquad$ hundreds and $\qquad$ hundreds.

550 is closest to $\qquad$ hundreds.

Rounded number is $\qquad$ .
h) $\mathbf{9 9 2}$ is between $\qquad$ hundreds and $\qquad$ hundreds.

992 is closest to $\qquad$ hundreds.

Rounded number is $\qquad$ .
i) $\mathbf{4 7 9}$ is between $\qquad$ hundreds and $\qquad$ hundreds.

479 is closest to $\qquad$ hundreds.

Rounded number is $\qquad$ .
j) $\mathbf{7 1 2}$ is between $\qquad$ hundreds and $\qquad$ hundreds.

712 is closest to $\qquad$ hundreds.

Rounded number is $\qquad$ .

|  | Number | Closer to | 0 hundreds |
| :---: | :---: | :---: | :---: |
| k) | 43 |  | Rundreds |
| l) | 188 |  |  |
| m) | 275 |  |  |
| n) | 620 |  |  |
| o) | 750 |  |  |
| p) | 549 |  |  |
| q) | 499 |  |  |
| r) | 821 |  |  |
| s) | 999 |  |  |

## Answers to Exercise One

a) 2 hundreds 200
b) 6 hundreds 600
c) 9 hundreds 900
d) 2 hundreds 200
e) 3 hundreds
f) 3 hundreds
300
g) 6 hundreds 600
h) 10 hundreds 1000
i) 5 hundreds 500
j) 7 hundreds 700
k) 0 hundreds 0
l) 2 hundreds 200
m) 3 hundreds 300
n) 6 hundreds 600
r) 8 hundreds
800
o) 8 hundreds 800
s) 10 hundreds 1000
p) 5 hundreds 500
q) 5 hundreds
500

Now look at a shorter method to round to the nearest 100.

When rounding to the nearest hundred, do this:

Step 1: Underline the hundreds place. 468

Step 2: Look at the digit following in the tens place.
468
Step 3: If the digit in the tens place is less than 5,

- write a zero in the tens place and the ones place.
- leave the hundreds digit as it is.


329 rounds to 300 (329 is nearer to 300 than to 400)
8
rounds to 800
$\downarrow$
608 rounds to 600

Step 4: If the digit in the tens place is 5 or more,

- write a zero in the tens place and the ones place.
- add one more hundred to the hundreds place.


362 rounds to 400 ( 362 is nearer to 400 than to 300 )
$\downarrow$
852 rounds to 900
$\downarrow$
964 rounds to $\mathbf{1} \mathbf{0 0 0}$ (one hundred more than 9 hundreds is 10 hundreds)

Note: If you are rounding to the nearest hundred, one and two-digit numerals round like this:
the numbers from 0 to 49 round to $\mathbf{0}$ the numbers from 50 to 99 round to $\mathbf{1 0 0}$.

## Exercise Two

Round your answer to the nearest hundred. Check your work using the answer key at the end of the exercise.
a) $426 \approx$
b) $395 \approx$ $\qquad$
c) $638 \approx$
d) $95 \approx$
e) $31 \approx$ $\qquad$ f) $211 \approx$ $\qquad$
g) $965 \approx$ $\qquad$ h) $438 \approx$ $\qquad$
i) $703 \approx$ $\qquad$ j) $796 \approx$ $\qquad$

Any number can be rounded to the nearest hundred.

$$
4 \underline{8} 27 \approx 4800 \quad 92 \underline{\underline{6} 59} \approx 927003 \underline{q} 75 \approx 4000
$$

k) $8372 \approx$ $\qquad$
l) $2082 \approx$ $\qquad$
m) $21639 \approx$ $\qquad$
n) $42983 \approx$ $\qquad$
o) $125438 \approx$ $\qquad$
p) $12651 \approx$ $\qquad$
q) $3888 \approx$ $\qquad$ r) $9109 \approx$ $\qquad$

## Answers to Exercise Two

a) 400
b) 400
c) 600
d) 100
e) 0
f) 200
g) 1000
h) 400
i) 700
j) 800
k) 8400
l) 2100
m) 21600
n) 43000
o) 125400
p) 12700
q) 3900
r) 9100

## Rounding to the Nearest Thousand

A number rounded to the nearest thousand will have zeros in the ones, tens, and hundreds places. The number will end with 0000,1 000, $2000,3000,4000,5000,6000,7000$, 8000 , or 9000.

When rounding to the nearest thousand, do this:

Step 1: Underline the thousands place.
4398

Step 2: Look at the digit following in the hundreds place.
4398

Step 3: If the digit in the hundreds place is less than 5 ,

- write a zero in the hundreds place, the tens place, and the ones place.
- leave the thousands digit as it is.

$\underline{4} 398$ rounds to 4000 (4 398 is nearer to 4000 than to 5000 )
$32 \underline{5} 263$ rounds to 325000

Step 4: If the digit in the hundreds place is $\mathbf{5}$ or more,

- write a zero in the hundreds, tens, and ones places.
- add one more thousand to the thousands place.
$\downarrow$
$\underline{2} 884$ rounds to 3000 (2884 is nearer to 3000 than to 2000 )

$8 \underline{6} 583$ rounds to 87000

$2 \underline{9} 965$ rounds to $\mathbf{3 0} 000$

Note: If you are rounding to the nearest thousand, one, two, and three-digit numerals round like this:
numerals from 0 to 499 round to $\mathbf{0}$
numerals from 500 to 999 round to $\mathbf{1 0 0 0}$.

## Exercise Three

Round your answer to the nearest thousand. Check your work using the answer key at the end of the exercise.
a) $3829 \approx$ $\qquad$
b) $2499 \approx$ $\qquad$
c) $8309 \approx$ $\qquad$ d) $4520 \approx$ $\qquad$
e) $9724 \approx$ $\qquad$ f) $386 \approx$
h) $23716 \approx$ $\qquad$
g) $2096 \approx$ $\qquad$
j) $8129 \approx$ $\qquad$
i) $45245 \approx$
)
k) $123542 \approx$ $\qquad$ l) $91871 \approx$ $\qquad$
m) $724 \approx$
n) $80910 \approx$ $\qquad$
o) $14639 \approx$ $\qquad$
p) $73816 \approx$ $\qquad$
q) $41171 \approx$
r) $52963 \approx$ $\qquad$
s) $829527 \approx$ $\qquad$
t) $1624099 \approx$ $\qquad$

## Answers to Exercise Three

a) 4000
b) 2000
c) 8000
d) 5000
e) 10000
f) 0
g) 2000
h) 24000
i) 45000
j) 8000
k) 124000
l) 92000
m) 1000
n) 81000
o) 15000
s) 830000
t) 1624000

## Rounding to the Nearest Ten Thousand

A number rounded to the nearest ten thousand will have zeros in the ones, tens, hundreds and thousands places. The number will end with $0000,10000,20000,30000,40000,50000$, 60000,70000 , 80000 , or 90000.

When rounding to the nearest ten thousand, do this:

Step 1: Underline the ten thousands place.
42398

Step 2: Look at the digit following in the thousands place.
42398

Step 3: If the digit in the thousands place is less than 5,

- write a zero in the thousands place, the hundreds place, the tens place, and the ones place.
- leave the ten thousands digit as it is.
$\downarrow$
42398 rounds to 40000 ( 42398 is nearer to 40000 than to 50000 )
$2 \underline{5} 3263$ rounds to 250000

Step 4: If the digit in the thousands place is 5 or more,

- write a zero in the thousands, hundreds, tens, and ones places.
- add one more thousand to the thousands place.


Note: If you are rounding to the nearest ten thousand, one, two, three and fourdigit numerals round like this:
numerals from 0 to 4999 round to $\mathbf{0}$
numerals from 5000 to 9999 round to $\mathbf{1 0} \mathbf{0 0 0}$.

Round your answer to the nearest ten thousand. Check your work using the answer key at the end of the exercise.
a) $53829 \approx$ $\qquad$
b) $12499 \approx$ $\qquad$
c) $86309 \approx$
d) $47520 \approx$ $\qquad$
e) $9724 \approx$ $\qquad$ f) $386 \approx$
g) $22096 \approx$ $\qquad$ h) $23716 \approx$ $\qquad$
i) $45245 \approx$ $\qquad$ j) $8129 \approx$ $\qquad$
k) $123542 \approx$ $\qquad$ l) $91871 \approx$ $\qquad$
m) $41724 \approx$ $\qquad$ n) $80910 \approx$ $\qquad$
o) $14639 \approx$ $\qquad$
p) $73816 \approx$ $\qquad$
q) $41171 \approx$ $\qquad$ r) $52963 \approx$ $\qquad$
s) $829527 \approx$ $\qquad$
t) $1624099 \approx$ $\qquad$

Answers to Exercise Four
a) 50000
b) 10000
c) 90000
d) 50000
e) 10000
f) 0
g) 20000
h) 20000
i) 50000
j) 10000
k) 120000
l) 90000
m) 40000
n) 80000
o) 10000
p) 70000
q) 40000
r) 50000
s) 830000
t) 1620000

## Rounding to the Nearest Hundred Thousand

A number rounded to the nearest hundred thousand will have zeros in the ones, tens, hundreds, thousands and ten thousands places. The number will end with 000000,100000 , $200000,300000,400000,500000,600000,700000,800000$, or 900000.

When rounding to the nearest hundred thousand, do this:

Step 1: Underline the hundred thousands place.
$\underline{4} 14398$

Step 2: Look at the digit following in the ten thousands place.
414398
Step 3: If the digit in the ten thousands place is less than 5,

- write a zero in the ten thousands place, the thousands place, the hundreds place, the tens place, and the ones place.
- leave the hundred thousands digit as it is.


414398 rounds to 400000

536 263 rounds to 500000

Step 4: If the digit in the thousands place is 5 or more,

- write a zero in the ten thousands place, thousands place, hundreds place, tens place, and ones place.
- add one more thousand to the hundred thousands place.

$\underline{2} 81884$ rounds to $\mathbf{3 0 0} 000$
(281 884 is nearer to 300000 than to 200000 )
$\downarrow$
672 583 rounds to $\mathbf{7 0 0} 000$
999 965 rounds to $\mathbf{1 0 0 0} 000$

Note: If you are rounding to the nearest hundred thousand, one, two, three, four and five-digit numerals round like this:
numerals from 0 to 49999 round to $\mathbf{0}$
numerals from 50000 to 99999 round to $100 \mathbf{0 0 0}$.

Round your answer to the nearest hundred thousand. Check your work using the answer key at the end of the exercise.
a) $143829 \approx$ $\qquad$
b) $12499 \approx$ $\qquad$
c) $861309 \approx$ $\qquad$
d) $472520 \approx$ $\qquad$
e) $96724 \approx$ $\qquad$ f) $386174 \approx$
g) $221096 \approx$ $\qquad$ h) $283716 \approx$ $\qquad$
i) $457245 \approx$ $\qquad$
j) $87129 \approx$ $\qquad$
k) $123542 \approx$ $\qquad$ l) $91871 \approx$ $\qquad$
m) $419724 \approx$ $\qquad$ n) $801910 \approx$ $\qquad$
o) $141639 \approx$ $\qquad$
p) $736816 \approx$ $\qquad$
q) $413171 \approx$ $\qquad$
r) $525963 \approx$ $\qquad$
s) $829527 \approx$ $\qquad$
t) $1624099 \approx$ $\qquad$

Answers to Exercise Five
a) 100000
b) 0
g) 200000
h) 300000
c) 900000
d) 500000
e) 100000
f) 400000
m) 400000
n) 800000
i) 500000
j) 100000
k) 100000
l) 100000
s) 800000
t) 1600000
o) 100000
p) 700000
q) 400000
r) 500000

## Rounding to the Nearest Million

A number rounded to the nearest million will have zeros in the ones, tens, hundreds, thousands, ten thousands and hundred thousands places. The number will end with 000000 , 1000 000, 2000 000, 3000 000, 4000 000, 5000 000, 6000 000, 7000 000, 8000000 , or 9000000.

When rounding to the nearest million, do this:
Step 1: Underline the millions place.
4214398

Step 2: Look at the digit following in the hundred thousands place.
4214398

Step 3: If the digit in the hundred thousands place is less than 5,

- write a zero in the hundred thousands place, the ten thousands place, the thousands, the hundreds place, the tens place, and the ones place.
- leave the millions digit as it is.
$\downarrow$
4
214
(4214398 is nearer to 4000000 than to 500000 )
$\underline{5} 367263$ rounds to 5000000

Step 4: If the digit in the hundred thousands place is 5 or more,

- write a zero in the hundred thousands place, the ten thousands place, the thousands place, the hundreds place, tens place, and ones place.
- add one more thousand to the thousands place.

Note: If you are rounding to the nearest million, one, two, three, four, five and six-digit numerals round like this:
numerals from 0 to 499999 round to $\mathbf{0}$ numerals from 500000 to 999999 round to $\mathbf{1 0 0 0} 000$.

## Exercise Six Round your answer to the nearest million. Check your work using the answer key at the end of the exercise.

a) $2143829 \approx$ $\qquad$
b) $4612499 \approx$ $\qquad$
c) $2861309 \approx$ $\qquad$
d) $8472520 \approx$ $\qquad$
e) $3196724 \approx$ $\qquad$
f) $386174 \approx$
g) $9221096 \approx$ $\qquad$ h) $1283716 \approx$ $\qquad$
i) $8457245 \approx$ $\qquad$
j) $7287129 \approx$ $\qquad$
k) $6123542 \approx$ $\qquad$
l) $2391871 \approx$ $\qquad$
m) $5419724 \approx$ $\qquad$
n) $2801910 \approx$ $\qquad$
o) $941639 \approx$ $\qquad$
p) $3736816 \approx$ $\qquad$
q) $3413171 \approx$ $\qquad$
r) $4525963 \approx$ $\qquad$
s) $1829527 \approx$ $\qquad$
t) $1624099 \approx$ $\qquad$

## Answers to Exercise Six

a) 2000000
b) 5000000
c) 3000000
d) 8000000
e) 3000000
f) 0
g) 9000000
h) 1000000
i) 8000000
j) 7000000
k) 6000000
l) 2000000
m) 5000000
n) 3000000
o) 1000000
p) 1000000
q) 3000000
r) 5000000
s) 2000000
t) 2000000

## Exercise Seven

For each problem, round to the number asked. Check your work using the answer key at the end of the exercise.

Example: Juan had 1094 baseball cards. Adamo has 2106 baseball cards. Ho has 1589 baseball cards. Round each number to the nearest 100.

| Name | Number | Rounded Number |
| :--- | :---: | :---: |
| Juan | 1094 | 1100 |
| Adamo | 2106 | 2100 |
| Ho | 1589 | 1600 |

a) On Friday, 5479 people went the football game. On Saturday, 4388 people went to the football game. On Sunday 4834 people went to the basketball game. Round each number to the nearest hundred.

| Day | Number | Rounded Number |
| :--- | :--- | :--- |
| Friday |  |  |
| Saturday |  |  |
| Sunday |  |  |

b) Mount Logan in the Yukon is the highest mountain in Canada. It is 5956 meters. Mount Waddington is the highest mountain in British Columbia. It is 4019 meters. Mount Columbia is the highest mountain in Alberta. It is 3741 meters. Round each number to the nearest hundred.

| Mountain | Number | Rounded Number |
| :---: | :---: | :---: |
| Mount Logan |  |  |
| Mount Waddington |  |  |
| Mount Columbia |  |  |

c) The Connaught Tunnel is 8082 meters long, The Mount MacDonald Tunnel is 14700 meters long. The Deas Island Tunnel is 629 meters long. Round each number to the nearest thousand.

| Tunnel | Number | Rounded Number |
| :--- | :--- | :--- |
| Connaught Tunnel |  |  |
| Mount MacDonald <br> Tunnel |  |  |
| Deas Island Tunnel |  |  |

d) The area of British Columbia is 944735 square kilometers. The area of Alberta is 661848 square kilometers. The area of Saskatchewan is 651036 square kilometers. Round each number to the nearest ten thousand.

| Province | Number | Rounded Number |
| :--- | :--- | :--- |
| British Columbia |  |  |
| Alberta |  |  |
| Saskatchewan |  |  |

e) In 2009, The population of British Columbia is 4455200 people. The population of Ontario is 13069200 people. The population of Quebec is 7828900 . Round each number to the nearest hundred thousand.

| Province | Number | Rounded Number |
| :--- | :--- | :--- |
| British Columbia |  |  |
| Ontario |  |  |
| Quebec |  |  |

f) In 2009, the population of Denmark was 5534 738. The population in Norway is 4876 100. The population in Ireland is 4459 300. Round each number to the nearest million.

| Country | Number | Rounded Number |
| :--- | :--- | :--- |
| Denmark |  |  |
| Norway |  |  |
| Ireland |  |  |

Answers to Exercise Seven
a)

| Day | Number | Rounded Number |
| :--- | :---: | :---: |
| Friday | 5479 | 5500 |
| Saturday | 4388 | 4800 |
| Sunday | 4834 | 4800 |

b)

| Mountain | Number | Rounded Number |
| :--- | :---: | :---: |
| Mount Logan | 5965 meters | 6000 meters |
| Mount Waddington | 4019 meters | 4000 meters |
| Mount Columbia | 3741 meters | 3700 meters |

c)

| Tunnel | Number | Rounded Number |
| :--- | :---: | :---: |
| Connaught Tunnel | 8082 meters | 8000 meters |
| Mount MacDonald Tunnel | 14700 meters | 15000 meters |
| Deas Island Tunnel | 692 meters | 1000 meters |

d)

| Province | Number | Rounded Number |
| :--- | :---: | :---: |
| British Columbia | 944735 square meters | 940000 square meters |
| Alberta | 661848 square meters | 660000 square meters |
| Saskatchewan | 651035 square meters | 650000 square meters |

e)

| Province | Number | Rounded Number |
| :--- | :---: | :---: |
| British Columbia | 4455200 people | 4500000 people |
| Ontario | 13069200 people | 13100000 people |
| Quebec | 7828900 people | 7800000 people |

f)

| Country | Number | Rounded Number |
| :--- | :---: | :---: |
| Denmark | 5534738 people | 6000000 people |
| Norway | 4876100 people | 5000000 people |
| Ireland | 4459300 people | 4000000 people |

A. Round your answer to the nearest hundred.

4 marks
a) $329 \approx$
b) $2481 \approx$ $\qquad$
c) $8065 \approx$ $\qquad$ d) $3916 \approx$ $\qquad$
B. Round your answer to the nearest thousand.

4 marks
a) $5521 \approx$ $\qquad$
b) $21813 \approx$ $\qquad$
c) $46499 \approx$ $\qquad$ d) $34860 \approx$ $\qquad$
C. Round your answer to the nearest ten thousand. 4 marks
a) $15521 \approx$ $\qquad$
b) $26318 \approx$ $\qquad$
c) $176994 \approx$ $\qquad$
d) $864860 \approx$ $\qquad$
D. Round your answer to the nearest hundred thousand.
a) $523521 \approx$ $\qquad$ b) $821932 \approx$ $\qquad$
c) $761949 \approx$ $\qquad$
d) $464051 \approx$ $\qquad$
E. Round your answer to the nearest million.

4 marks
a) $7312908 \approx$ $\qquad$ b) $6009280 \approx$ $\qquad$
c) $9152801 \approx$ $\qquad$
d) $576679 \approx$ $\qquad$
a) The longest river in North America is the Mississippi River which is 6275 kilometers long. The longest river in Canada is the Mackenize River which is 4242 kilometers long. The Yukon River is 3701 kilometers long. The St. Lawrence River is 3058 kilometers long. Round each number to the nearest hundred.

| River | Number | Rounded Number |
| :--- | :--- | :--- |
| Mississippi River |  |  |
| Mackenzie River |  |  |
| Yukon River |  |  |
| St. Lawrence River |  |  |

b) In 2009, the population of Shanghai, China was 13831 900. The population of Moscow, Russia was 10508 971. The population of New York City, United States of America was 8363 710. The population of Vancouver, Canada was 578041 . Round each of these numbers to the nearest hundred thousand.

| City | Number | Rounded Number |
| :--- | :--- | :--- |
| Shanghai, China |  |  |
| Moscow, Russia |  |  |
| New York City, USA |  |  |
| Vancouver, Canada |  |  |

## Answers to Topic E Self-Test

A.
a) 300
b) 2500
c) 8100
d) 4000
B.
a) 6000
b) 22000
c) 46000
d) 35000
C.
a) 20000
b) 30000
c) 180000
d) 860000
D.
$\begin{array}{llllll}\text { a) } 500000 & \text { b) } & 800000 & \text { c) } 800000 & \text { d) } & 500000 \\ \begin{array}{llll}\text { E. } \\ \text { a) } 7000000 & \text { b) } 6000000 & \text { c) } 9000000 & \text { d) }\end{array} 1000000\end{array}$
F.
a)

| River | Number | Rounded Number |
| :---: | :---: | :---: |
| Mississippi River | 6275 kilometers | 6300 kilometers |
| Mackenzie River | 4242 kilometers | 4200 kilometers |
| Yukon River | 3701 kilometers | 3700 kilometers |
| St. Lawrence River | 3058 kilometers | 3100 kilometers |

b)

| City | Number | Rounded Number |
| :---: | :---: | :---: |
| Shanghai, China | 13831900 people | 13800000 people |
| Moscow, Russia | 10508971 people | 10500000 people |
| New York City, USA | 8363710 people | 8400000 people |
| Vancouver, Canada | 578041 people | 600000 people |

## Unit 1 Review - Number Sense

You will now practice all the skills you learned in Unit 1. Check your work using the answer key at the end of the review.
A. Write the place value names (ones, tens, hundreds, thousands, ten thousands, hundred thousands, millions) for each underlined digit.
a) $43 \underline{9} 2$
b) $76 \underline{5}$
c) $1 \underline{8} 293$
d) $56 \underline{428}$ $\qquad$
e) $3 \underline{6} 41758$ $\qquad$
f) $4 \underline{2} 6153$ $\qquad$
g) $\underline{8} 429576$ $\qquad$ h) $\underline{4} 258$ $\qquad$
B. Using the number below, write the digit that is in each of the following place values.

349285106
a) millions $\qquad$
b) ones $\qquad$
c) ten thousands $\qquad$
d) thousands
$\qquad$
e) hundreds $\qquad$ f) hundreds thousands $\qquad$
g) tens $\qquad$
C. Underline the digit for the place value named.
a) hundreds
5321
b) tens
8703
c) ten thousands
34891
d) hundred thousands 891402
e) thousands
72491
f) millions
4201856
D. Write the word names for the numbers.
a) 818
b) 1678
c) 29764
d) 1984152 $\qquad$
e) 42803 $\qquad$
f) 226917

## E. Write the numerals for these word names.

a) twenty-five thousand one hundred thirty-two $\qquad$
b) one thousand two hundred seven $\qquad$
c) two hundred fifteen thousand twenty-four $\qquad$
d) one million six hundred ninety-five thousand four hundred twenty $\qquad$
e) seven hundred twenty-six $\qquad$
f) nine thousand four $\qquad$

## F. Write each number in expanded form.

a) 184
b) 3908 $\qquad$
c) 61281 $\qquad$
d) 1539587 $\qquad$
e) 366524
G. Write each number from expanded form.
a) $50000+6000+600+90+8$ $\qquad$
b) $200000+70000+8000+200+60+1$ $\qquad$
c) $3000+800+80+5$ $\qquad$
d) $1000000+400000+70000+6000+100+50+3$
e) $700+1$ $\qquad$
H. Arrange these numbers in order from smallest to largest.
a)
18
34937
727
1487
147832
b) $\quad 769 \quad 6790 \quad 697 \quad 76976 \quad 76796$
I. Write <, >, or = in each blank as needed.
a) 9698 $\qquad$ 6899
b) 7542 $\qquad$ 7452
c) 34682 $\qquad$ 39421
d) 124693 $\qquad$ 124693
e) 738423 $\qquad$ 783423
f) 45832 $\qquad$ 54123
J. Round each number to the nearest hundred.
a) $774 \approx$ $\qquad$ b) $2581 \approx$ $\qquad$
c) $21204 \approx$ $\qquad$ d) $692 \approx$ $\qquad$
e) $572098 \approx$ $\qquad$
f) $7652931 \approx$ $\qquad$

## K. Round each number to the nearest thousand

a) $948 \approx$ $\qquad$
b) $75767 \approx$ $\qquad$
c) $288869 \approx$ $\qquad$ d) $479 \approx$ $\qquad$
e) $3976 \approx$ $\qquad$
f) $5012 \approx$
$\qquad$
L. Round each number to the nearest ten thousand.
a) $4028 \approx$ $\qquad$
b) $226917 \approx$ $\qquad$
c) $126804 \approx$ $\qquad$
d) $9794487 \approx$ $\qquad$
e) $87805 \approx$ $\qquad$ f) $5912 \approx$ $\qquad$
M. Round each number to the nearest hundred thousand.
a) $687029 \approx$ $\qquad$ b) $1326876 \approx$ $\qquad$
c) $523715 \approx$ $\qquad$
d) $4766883 \approx$ $\qquad$
e) $8182390 \approx$ $\qquad$ f) $792013 \approx$ $\qquad$
N. Round each number to the nearest million.
a) $1009627 \approx$ $\qquad$
b) $28101052 \approx$ $\qquad$
c) $894063 \approx$ $\qquad$
d) $9778656 \approx$ $\qquad$
e) $80379591 \approx$ $\qquad$
f) $3102975 \approx$ $\qquad$

## O. Word Problems.

a) The three heaviest sharks are the whale shark weighing 30500 kilograms. The basking shark weighing 9258 kilograms. The great white shark weighing 3507 kilograms. Round each number to the nearest thousand.

| Shark | Number | Rounded Number |
| :--- | :--- | :--- |
| Whale shark |  |  |
| Basking shark |  |  |
| Great White Shark |  |  |

b) Three of the largest islands in the world are New Guinea covering 785753 square kilometers, Baffin Island covering 503944 square kilometers and Honshu Island covering 227413 square kilometers. Round each number to the nearest ten thousand.

| Island | Number | Rounded Number |
| :---: | :--- | :--- |
| New Guinea |  |  |
| Baffin Island |  |  |
| Honshu Island |  |  |

## Answers to Unit 1 Review - Number Sense

A.
a) tens
b) ones
c) thousands
d) hundreds
e) hundred thousands f) ten thousands
g) millions
h) thousands
B.
a) 2
b) 6
c) 8
d) 5
e) 1
f) 2
g) 0
C.
a) $5 \underline{3} 21$
b) $87 \underline{0} 3$
c) $\underline{3} 4891$
d) $\quad \mathbf{8} 91402$
e) $7 \underline{2} 491$
f) $\underline{4} 201856$
D.
a) eight hundred eighteen
b) one thousand six hundred seventy-eight
c) twenty-nine thousand seven hundred sixty-four
d) one million nine hundred eighty-four thousand one hundred fifty-two
e) forty-two thousand eight hundred three
f) two hundred twenty-six thousand nine hundred seventeen
E.
a) 25132
b) 1207
c) 215024
d) 1695420
e) 726
f) 9004
F.
a) $100+80+4$
b) $3000+900+8$
c) $60000+1000+200+80+1$
d) $1000000+500000+30000+9000+500+80+7$
e) $300000+60000+6000+500+20+4$
G.
a) 56698
b) 278261
c) 3885
d) 1476153
e) 701
H.
a) $18,727,1487,34937,147832$
b) 697, 769, $6790,76796,76976$
I.
a) $>$
b) $>$
c) $<$
d) $=$
e) <
f) $<$
J.
a) 800
b) 2600
c) 21200
d) 700
e) 572100
f) 7652900
K.
a) 1000
b) 76000
c) 289000
d) 0
e) 4000
f) 5000
L.
a) 0
b) 230000
c) $\mathbf{1 3 0 0 0 0}$
d) 9790000
e) 90000
f) 10000
M.
a) 700000
b) 1300000
c) 500000
d) 4800000
e) 8200000
f) 800000
N.
a) 1000000
b) 28000000
c) 1000000
d) 10000000
e) 80000000
f) 3000000
0.
a)

| Shark | Number | Rounded <br> Number |
| :---: | :---: | :---: |
| Whale shark | 30500 | 31000 |
| Basking shark | 9258 | 9000 |
| Great White Shark | 3507 | 4000 |

b)

| Kilometers | Number | Rounded <br> Number |
| :---: | :---: | :---: |
| New Guinea | 785753 | 790000 |
| Baffin Island | 503944 | 500000 |
| Honshu Island | 227413 | 230000 |

## CONGRATULATIONS!!

Now you have finished Unit 1.

## TEST TIME!

Ask your instructor for the Practice Test for this unit. Once you've done the practice test, you need to do the unit 1 test. Again, ask your instructor for this. Good luck!

