# 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

|--|--|

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.

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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.

4 392 8 253 23 693

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

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

2 212 means 2 thousands, 2 hundreds, 1 ten, and 2 ones



3 064 means 3 thousands, 0 hundreds, 6 tens, and 4 ones



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.

	888868	

364 is **not** the same as 3 064.

### **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)	8 261 =	thousands	hundreds	tens	ones
b)	4 005 =	thousands	hundreds	tens	ones
c)	2 931 =	thousands	hundreds	tens	ones
d)	1 034 =	thousands	hundreds	tens	ones
e)	2 608 =	thousands	hundreds	tens	ones
f)	7 543 =	thousands	hundreds	tens	ones
g)	2 900 =	thousands	hundreds	tens	ones

#### Answers to Exercise One

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

43 692 = 4 ten thousands, 3 thousands, 6 hundreds, 9 tens, and 2 ones

43 692 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
80 300	8	0	3	0	0
OR		80	3	0	0

b)

	ten thousands	thousands	hundreds	tens	ones
36 981					
OR					

c)

	ten thousands	thousands	hundreds	tens	ones
31 205					
OR					

d)

	ten thousands	thousands	hundreds	tens	ones
99 999					
OR					

e)

	ten thousands	thousands	hundreds	tens	ones
15 002					
OR					

f)

	ten thousands	thousands	hundreds	tens	ones
75 125					
OR					

#### Answers to Exercise Two

b)

γ.						
		ten thousands	thousands	hundreds	tens	ones
	36 981	3	6	9	8	1
	OR		36	9	8	1

c)

	ten thousands	thousands	hundreds	tens	ones
31 205	3	1	2	0	5
OR		31	2	0	5

d)

	ten thousands	thousands	hundreds	tens	ones
99 999	9	9 9		9	9
OR		99	9	9	9

e)

	ten thousands	thousands	hundreds	tens	ones
15 002	1	5	0	0	2
OR		15	0	0	2

f)

	ten thousands	thousands	hundreds	tens	ones
75 125	7	5	1	2	5
OR		75	1	2	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 thousands	ten thousands	thousands	hundreds	tens	ones	
432 467	4	3	2	4	6	7	

	hundred thousands	ten thousands	thousands	hundreds	tens	ones
803 214	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. 1 000 000

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.

2 368 100	3 150 213
14 263 942	5 521 671

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 <u>3</u> 206	thousands	b) 24 <u>6</u> 8	tens
c)	<u>6</u> 22		d) <u>9</u> 2 002	
e)	92 <u>0</u> 02		f) 14 2 <u>6</u> 2	
g)	<u>4</u> 8 076		h) 5 <u>5</u> 55	
i)	12 24 <u>5</u>		j) 92 0 <u>0</u> 2	
k)	1 <u>2</u> 026		l) <u>6</u> 348	

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	1)	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	416 245	b)	tens	363 482
c)	ten thousands	36 482	d)	hundreds	1 456
e)	hundred thousands	206 415	f)	thousands	63 421
g)	hundreds	74 322	h)	hundred thousands	685 413
i)	thousands	221 300	j)	ten thousands	10 000
k)	ones	16 394	1)	tens	684

An	swers to Exercise Fo	our					
a)	41 <u>6</u> 245	b)	363 4 <u>8</u> 2	c)	<u>3</u> 6 482	d)	1 <u>4</u> 56
e)	<u>2</u> 06 415	f)	6 <u>3</u> 421	g)	74 <u>3</u> 22	h)	<u>6</u> 85 413
i)	22 <u>1</u> 300	j)	<u>1</u> 0 000	k)	16 39 <u>4</u>	1)	6 <u>8</u> 4

## **Reading and Writing Numerals**

You know that the **digits** are 0 1 2 3 4 5 6 7 8 9 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 numeral46 is a numeral3 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 **four**teen
- 15 **fif**teen
- 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- <b>two</b>	32	thirty <b>-two</b>	42	forty <b>-two</b>
23	twenty-three	33	thirty- <b>three</b>	43	forty-three
24	twenty <b>-four</b>	34	thirty <b>-four</b>	44	forty <b>-four</b>
25	twenty <b>-five</b>	35	thirty <b>-five</b>	45	forty <b>-five</b>
26	twenty-six	36	thirty-six	46	forty-six
27	twenty-seven	37	thirty-seven	47	forty-seven
28	twenty-eight	38	thirty <b>-eight</b>	48	forty-eight
29	twenty-nine	39	thirty <b>-nine</b>	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.

<b>367</b> is made of	3 hundreds	<b>6</b> tens	7 ones
Each is written:	three hundred	sixty	seven
Put the parts together:	three hundred s	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!

<b>504</b> is made of	5 hundreds	0 tens	4 ones
Each is written:	five hundred		four
Put the parts together:	five hundred fo	ur	

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

<b>890</b> is made of	8 hundreds	9 tens	0 ones
Each is written:	eight hundred	ninety	
Put the parts together:	eight hundred 1	ninety	

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

<b>100</b> is made of	1 hundreds	0 tens	<b>0</b> 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 thousands	ten thousands	thousands	hundreds	tens	ones
<b>423 796</b> is made of	4	2	3	7	9	6
Each is written	four hundred	four hundred twenty-three <b>thousand</b>			ninety	six
Put the parts together	four hundred	l twenty-thre	e thousand se	even hundre	ed ninety-	six

423 796 is four hundred twenty-three **thousand** seven hundred ninety-six

	hundred thousands	ten thousands	thousands	hundreds	tens	ones
<b>26 201</b> is made of		2	6	2	0	1
Each is written	twen	ty-six <b>thous</b>	and	two hundred		one
Put the parts together	twenty-six th	ousand two	hundred one			

26 201 is twenty-six thousand two hundred one

	hundred thousands	ten thousands	thousands	hundreds	tens	ones
<b>400 000</b> is made of	4	0	0	0	0	0
Each is written	four h	four hundred <b>thousand</b>				
Put the parts together	four hundred	l thousand				

400 000 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 thousands	ten thousands	thousands	hundreds	tens	ones
<b>491 200</b> is						
made of						
Each is						
written						
Put the parts						
together						

#### b)

	hundred thousands	ten thousands	thousands	hundreds	tens	ones
<b>19 631</b> is						
made of						
Each is						
written						
Put the parts						
together						

	hundred thousands	ten thousands	thousands	hundreds	tens	ones
<b>304 212</b> is						
made of						
Each is						
written						
Put the parts						
together						

### d)

	hundred thousands	ten thousands	thousands	hundreds	tens	ones
3 426 is made						
of						
Each is						
written						
Put the parts						
together						

e)

	hundred thousands	ten thousands	thousands	hundreds	tens	ones
218 000 is						
made of						
Each is						
written						
Put the parts						
together						

	hundred thousands	ten thousands	thousands	hundreds	tens	ones
623 009 is						
made of						
Each is						
written						
Put the parts						
together						

g) 365 456 \_\_\_\_\_

h) 299 899 \_\_\_\_\_

i) 456 876 \_\_\_\_\_

j) 923 471 \_\_\_\_\_

k) 53 679 \_\_\_\_\_

#### Answers to Exercise Five

#### a)

	hundred thousands	ten thousands	thousands	hundreds	tens	ones	
<b>491 200</b> is made of	4	9	1	2	0	0	
Each is written	four hund	red ninety-one	two hundred				
Put the parts together	four hundred ni	Four hundred ninety-one thousand two hundred					

#### b)

	hundred thousands	ten thousands	thousands	hundreds	tens	ones
<b>19 631</b> is made of		1	9	6	3	1
Each is written	nii	neteen thousan	six hundred	thirty	one	
Put the parts together	nineteen thousand six hundred thirty-one					

#### c)

	hundred thousands	ten thousands	thousands	hundreds	tens	ones
<b>304 212</b> is made of	3	0	4	2	1	2
Each is written	three hu	undred four the	ousand	two hundred	twelve	
Put the parts together	three hundred four thousand two hundred twelve					

#### d)

	hundred thousands	ten thousands	thousands	hundreds	tens	ones
<b>3 426</b> is made of			3	4	2	6
Each is written	t	three thousand			twenty	six
Put the parts together	three thousand four hundred twenty-six					

e)				
		hundred thousands	ten thousands	thousands
	<b>218 000</b> is made of	2	1	8
-				

OI					
Each is written	two hund	lred eighteen th	nousand		
Put the parts together	two hundred eig	ghteen thousan	d		

hundreds

0

tens

0

ones

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		hundred thousands	ten thousands	thousands	hundreds	tens	ones
	623 009 is made of	6	2	3	0	0	9
	Each is written	six hundre	d twenty-three	thousand			nine
	Put the parts together six hundred twenty-the			sand nine			
g)	three hundr	ed sixty-five tho	usand four hun	dred fifty-six			
h)	two hundre	d ninety-nine the	usand eight hu	ndred ninety-ni	ne		
i)	four hundred fifty-six thousand eight hundred seventy-six						
j)	nine hundred twenty-three thousand four hundred seventy-one						
k)	fifty-three t	thousand six hund	dred seventy-n	ine			

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 thousands	ten thousands	thousands	hundreds	tens	ones
<b>2 643 182</b> is made of	2	6	4	3	1	8	2
Each is written	two <b>million</b>	six hundre	six hundred forty-three <b>thousand</b>			eighty	two
Put the parts together	two <b>millio</b> i	n six hundred	l forty-three	<b>thousand</b> or	ne hundred	eighty-tv	VO

	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
6 510 231 is made of	6	5	1	0	2	3	1
Each is written	six <b>million</b>	five hu	five hundred ten <b>thousand</b>			thirty	one
Put the parts together	six <b>millio</b>	<b>n</b> five hundre	d ten <b>thousa</b> i	<b>nd</b> two hundr	ed 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 thousands	ten thousands	thousands	hundreds	tens	ones
2 851 234		liousullus	linousullus				
is made of							
Each is							
written							
Put the							
parts							
together							

b)

	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
3 186 662							
is made of							
Each is							
written							
Put the							
parts							
together							

c)

	millions	hundred	ten	thousands	hundreds	tens	ones
		thousands	thousands	thousands	nunureus	tens	ones
8 283 450							
is made of							
Each is							
written							
Put the							
parts							
together							

d)

	millions	hundred	ten	thousands	hundreds	tens	ones
		thousands	thousands	thousands	nunureus	tens	ones
2 345 409							
is made of							
Each is							
written							
Put the							
parts							
together							

e) 9 276 403 \_\_\_\_\_

f) 3 916 875 \_\_\_\_\_

g) 4 873 519 \_\_\_\_\_

#### Answers to Exercise Six a)

	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	
<b>2 851 234</b> is made of	2	8	5	1	2	3	4	
Each is written	two million	eight hu	ndred fifty-one t	two hundred	thirty	four		
Put the parts together	two million	wo million eight hundred fifty-one thousand two hundred thirty-four						

b)

	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones		
<b>3 186 662</b> is made of	3	1	8	6	6	6	2		
Each is written	three million	one hund	dred eighty-six t	six hundred	sixty	two			
Put the parts together	three million	ree million one hundred eighty-six thousand six hundred sixty-two							

#### c)

	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones		
8 283 450 is made of	8	2	8	3	4	5	0		
Each is written	eight million	two hund	two hundred eighty-three thousand four hundred fifty						
Put the parts together	eight million	ght million two hundred eighty-three thousand four hundred fifty							

d)

2 345 409 is made of2345409Each is writtentwo millionthree hundred forty-five thousandfour hundredninePut the partsthree hundred to to find on the back of the		millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones		
Each is writtentwo millionthree hundred forty-five thousandfour hundredninePut the partsthree hundred forty five thousand four hundredfour hundrednine	<b>2 345 409</b> is made of	2	3	4	5	4	0	9		
Put the parts	Each is written	two million	three hur	three hundred forty-five thousand four hundred						
together two million three nundred forty-five thousand four nundred nine	Put the parts together	two million	vo million three hundred forty-five thousand four hundred nine							

e)

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

four million eight hundred seventy-three thousand five hundred nineteen g)

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

241 962 107	483 450
27 800	2 345 409
164 231	260 164 342
138 000	410 623
912 050	24 900
227 695	105 576

## **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 tho	usand	nine hund	lred fort	y-one			
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones			
	8	2	3	9	4	1			
823 941									

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

three million	four hundred	l eighty-one thou	sand	five hund	red sixty	-				
				seven						
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones				
3	4	8	1	5	6	7				
	3 481 567									

#### c) two hundred seventy-six thousand five hundred eight

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
		<u>.</u>				

#### 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

#### 1) 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	
276 508							

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

one million	six hundred	l fifty-eight thousand	d	three hund	lred twent	y-five
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
1	6	5	8	3	2	5
		1 658 325				

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

four million	eight hund	red sixteen thousand	l	two hund	lred thirty	-two
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
4	8	1	6	2	3	2
		4 816 232				

f) six hundred twenty thousand four hundred thirty-nine

	six hundr	ed twenty thousand		four hund	lred thirty	nine
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
	6	2	0	4	3	9
		620 439				

g) twenty-five thousand five hundred seventy-four

	twent	y-five thousand		five hundr	ed seventy	-four
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
		2	5	5	7	4
		25 574				

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

nine million	one hundred	l sixty-three thousar	ıd	two hu	ndred fifte	en
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
9	1	6	3	2	1	5
		9 163 215				

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

	eight	y-six thousand		three hun	dred sixty-	eight
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
		8	6	3	6	8
		86 368	•			

j) seven million twenty-six thousand five hundred eighteen

seven million	twent	y-six thousand		five hun	dred eight	een
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
7	0	2	6	5	1	8
•	, v	_	Ŭ	•		Ŭ

#### 7 026 518

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

six million	two hundre	d nineteen thousand	l	three hun	dred forty	-five
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
6	2	1	9	3	4	5
		6 219 345				

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

	two hundred	seventy-nine thousa	nd	two huno	dred sixty-	one
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
	2	7	9	2	6	1
		279 261				

four million	one hundr	ed seventy thousand		three h	undred eig	ht
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
4	1	7	0	3	0	8
		4 170 308				
n) nine mill	ion five hundred eighty-tw	4 170 308			-4 f <sup>o</sup>	
n) nine mill nine million	ion five hundred eighty-tw five hundre	4 170 308 To thousand sixty-five d eighty-two thousar	ıd	siz	xty-five	
n) nine mill nine million millions	ion five hundred eighty-tw <b>five hundre</b> hundred thousands	4 170 308 To thousand sixty-five d eighty-two thousand ten thousands	nd thousands	six hundreds	<b>xty-five</b> tens	ones
n) nine mill nine million millions 9	ion five hundred eighty-tw five hundre hundred thousands 5	4 170 308 To thousand sixty-five d eighty-two thousand ten thousands 8	thousands	siz hundreds 0	<b>xty-five</b> tens 6	ones 5

**Exercise Eight** 

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) 2 569 kilometers
  - b) 8 893 kilometers
- d) 4 455 207 peopleg) 4 558 kilometers
- e) 3 230 000 people
- eters h) 6
- h) 6 119 kilometers
- c) 40 076 kilometersf) 8 536 kilometers

**Topic B: Self-Test** Mark / 17 Aim 14/17 A. Write the place value for the underlined digit. 6 marks a) 87<u>6</u>5 b) 930 c) <u>47</u> 932 \_\_\_\_\_ d) <u>85</u> 421 \_\_\_\_\_ e) <u>279</u> 673 \_\_\_\_\_ f) <u>397</u> \_\_\_\_\_ **B.** Write the word names for these numerals. 6 marks a) 59 b) 942 c) 7 378 d) 8 200 \_\_\_\_\_ e) 4 005 \_\_\_\_\_ f) 58 310 C. Write the numerals for these word names. 5 marks a) eight hundred forty-seven b) four thousand three hundred eighty c) two hundred seventy-five thousand eighty-seven d) sixty thousand four hundred sixteen
An	swers to Topic B	Self	-Test						
<b>A.</b>									
a)	tens	b)	ones		c)	ten thousand	ls		
d)	thousands	e)	hundred thousan	nds	f)	hundreds			
В.									
a)	fifty-nine								
b)	nine hundred for	ty-tv	VO						
c)	seven thousand t	three	hundred seventy-	eight					
d)	eight thousand t	wo h	undred						
e)	four thousand fire	ve							
f)	fifty-eight thous	and t	hree hundred ten						
<b>C.</b>									
a)	847	b)	4 380	c)	275 087	7 d)	60 416	e)	15 020

# **Topic C: Expanded Form**

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

### Example:

	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
<b>598</b> is made of					5	9	8
Each is written			L	L	500	90	8
Expanded form	500 + 90	) + 8					

### Example:

	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones		
<b>1 068</b> is made of				1	0	6	8		
Each is written				1 000		60	8		
Expanded form	1 000 + 3	00 + 300 + 60 + 8							

### Example:

	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	
<b>243 690</b> is made of		2	4	3	6	9	0	
Each is written		200 000	40 000	3 000	600	90	0	
Expanded form	200 000 -	$0\ 000\ +\ 40\ 000\ +\ 3\ 000\ +\ 600\ +\ 90$						

# **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 thousands	ten thousands	thousands	hundreds	tens	ones
<b>329</b> is made of					3	2	9
Each is written					300	20	9
Expanded form	300 + 20	+ 9					

### b) 762

	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
is made							
of							
Each is							
written							
Expanded							
form							

### c) 1 847

	millions	hundred	ten	thousands	hun drada	tang	0.000
		thousands	thousands	mousands	nunareas	tens	ones
is made							
of							
Each is							
written							
Expanded							
form							

## d) 6 301

	millions	hundred	ten	thousands	hundrada	tong	onas
		thousands	thousands	mousanus	nunareas	tens	ones
<b>6 301</b> is							
made of							
Each is							
written							
Expanded							
form							

## e) 16 492

	millions	hundred	ten	thousands	hundreds	tens	ones
		thousands	thousands	thousands	nundreds	tens	ones
<b>16 492</b> is							
made of							
Each is							
written							
Expanded							
form							

# f) 74 296

	millions	hundred	ten	thousands	hundreds	tens	ones
		ulousallus	ulousallus				
74 296 1s							
made of							
Each is							
written							
Expanded							
form							

## g) 378 403

	millions	hundred	ten	thousands	hundreds	tens	ones
		ulousalius	ulousallus				
<b>378 403</b> is							
made of							
Each is							
written							
Expanded							
form							

## h) 721 834

	millions	hundred	ten	thousands	hundrada	tong	0000
		thousands	thousands	mousanus	nunureus	tens	ones
<b>721 834</b> is							
made of							
Each is							
written							
Expanded							
form							

## i) 3 816 450

	millions	hundred	ten	thousands	hundrada	tons	ones
		thousands	thousands	mousanus	nunureus	tens	
3 816 450							
is made of							
Each is							
written							
Expanded							
form							

### j) 2 941 678

	millions	hundred	ten	thousands	hundrada	tons	ones
		thousands	thousands	thousanus	nunureus	tens	
2 941 678							
is made of							
Each is							
written							
Expanded							
form							

#### Answers to Exercise One

```
a) 300 + 20 + 9

b) 700 + 60 + 2

c) 1\ 000 + 800 + 40 + 7

d) 6\ 000 + 300 + 1

e) 10\ 000 + 6\ 000 + 400 + 90 + 2

f) 70\ 000 + 4\ 000 + 200 + 90 + 6

g) 300\ 000 + 70\ 000 + 8\ 000 + 400 + 3

h) 700\ 000 + 20\ 000 + 1\ 000 + 800 + 30 + 4

i) 3\ 000\ 000 + 800\ 000 + 10\ 000 + 6\ 000 + 400 + 50

j) 2\ 000\ 000 + 900\ 000 + 40\ 000 + 1\ 000 + 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:**  $7\ 000 + 500 + 40 + 1 = 7\ 541$ 

**Example:**  $4\ 000\ 000\ +\ 600\ 000\ +\ 70\ 000\ +\ 8\ 000\ +\ 900\ +\ 3\ =\ 4\ 678\ 903$ 

a) 400 + 10 + 6 =

b) 500 + 40 + 2 =

c)  $5\ 000\ +\ 600\ +\ 10\ +\ 8\ =$ 

d)  $4\ 000\ +\ 100\ +\ 40\ +\ 5\ =$ 

e)  $20\ 000\ +\ 1\ 000\ +\ 800\ +\ 10\ +\ 2$  =

f) 
$$40\ 000\ +\ 200\ +\ 5\ =$$

g) 
$$30\ 000\ +\ 4\ 000\ +\ 50\ +\ 3\ =$$

h) 
$$200\ 000\ +\ 50\ 000\ +\ 3\ 000\ +\ 400\ +\ 80\ +\ 3\ =$$

i) 
$$300\ 000\ +\ 50\ 000\ +\ 6\ 000\ +\ 700\ +\ 10\ +\ 9\ =$$

j) 
$$1\ 000\ 000\ +\ 400\ 000\ +\ 20\ 000\ +\ 3\ 000\ +\ 600\ +\ 50\ +\ 7\ =$$

An	Answers to Exercise Two							
a)	416	b)	542	c)	5 618	d)	4 145	
e)	21 812	f)	40 205	g)	34 053	h)	253 483	
i)	356 719	j)	1 423 657					

A.	Write	each number in expanded form.	6 marks
	a)	643	
	b)	759	
	c)	4 821	
	d)	94 205	
	e)	367 542	

f) 1 850 643

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

6 marks

a) 
$$300 + 60 + 9 =$$

b) 700 + 5 =

c)  $1\ 000\ +\ 400\ +\ 90\ +\ 1\ =$ 

d)  $20\ 000\ +\ 1\ 000\ +\ 500\ +\ 80\ +\ 4\ =$ 

e)  $500\ 000\ +\ 40\ 000\ +\ 2\ 000\ +\ 700\ +\ 30\ +\ 9\ =$ 

f)  $3\ 000\ 000\ +\ 900\ 000\ +\ 60\ 000\ +\ 8\ 000\ +\ 400\ +\ 30\ +\ 1\ =$ 

```
Answers to Topic C Self-Test

A.

a) 600 + 40 + 3

b) 700 + 50 + 9

c) 4\ 000 + 800 + 20 + 1

d) 90\ 000 + 4\ 000 + 200 + 5

e) 300\ 00 + 60\ 000 + 7\ 000 + 500\ 000 + 40 + 2

f) 1\ 000\ 000 + 800\ 000 + 50\ 000 + 600 + 40 + 3

B.

a) 369 b) 705 c) 1\ 491 d) 21\ 584

e) 542\ 739 f) 3\ 968\ 431
```

# **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?



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

**Example A:** Compare 1 628 and 1 599.

- thousands are the same.
- hundreds
  1 628 has 6 hundreds.
  1 599 has 5 hundreds.
- 1 628 is larger than 1 599.

### **Example B:** Compare 13 562 and 13 612

- ten thousands are the same
- thousands are the same
- hundreds
   13 562 has 5 hundreds
   13 612 has 6 hundreds
- 13612 is larger than 13 562.

**Example C:** Compare 673 234 and 673 423

- hundred thousands are the same
- ten thousands are the same
- thousands are the same
- hundreds 673 234 has 2 hundreds
  - 673 423 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 1587 is less than 107999 is less than 1 001

Exercise	e Two	Draw your v	a box vork	around th using the a	ne larger num answer key at	eral i the e	in each pai end of the	r. Check exercise.
a)	1016	1 316	b)	1 229	1 329	c)	5 230	5 210
d)	2 151	2 159	e)	83 476	93 475	f)	31 276	31 576
g)	46 821	46 801	h)	343	3 740	i)	8 325	8 236
j)	11 278	1 325	k)	4 289	4 230	l)	13 471	13 422
m)	31 476	32 502	n)	876	2 319	0)	5 618	8 234

А	nswers to Exer	cise '	Гwo						
b	1 329	c)	5 230	d)	2 159	e)	93 475	f)	31 576
g	46 821	h)	3 740	i)	8 325	j)	11 278	k)	4 289
1)	13 471	m)	32 502	n)	2 319	o)	8 234		

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 66, 16, 61 and 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	Arrai your	Arrange these numbers in order from smallest to largest. Check your work using the answer key at the end of the exercise.				
a) 1 235	1 352	1 523	1 253			
b) 47 259	42 759	45 279	47 592			

c)		76 940	79 053	73 502	
d)	456 719	465 981	546 423	564 082	
e)	12 546	5 781	423	172 901	
f)	114 444	444	14	1 114 444 44	
g)	777	17	71	7 177 717 7	7 177
<b>Ans</b> a) b) c)	swers to Exer 1 235, 1 253, 42 759, 45 2' 73 050, 73 50	<b>cise Three</b> , 1 352, 1 523 79, 47 259, 47 5 02, 76 940, 79 (	592 153	<ul> <li>e) 423, 5 781, 12 546, 172</li> <li>f) 14, 44, 444, 114 444, 1</li> <li>g) 17, 71, 717, 777, 7 177</li> </ul>	2 901 114 444 , 77 177

# **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.)

5 < 12 5 is less than 12 6 > 3 6 is greater than 3

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)	4 376	_12 376	b)	342 981	324 762
c)	1 520	_1 530	d)	5 821	5 821
e)	3 674	_ 3 296	f)	6 214	6 251
g)	14 879	_ 14 900	h)	78 432	78 429
i)	45 823	_ 54 781	j)	732 591	_ 732 950

Answers	to Exercise For	ur			
a) <	b) >	c) <	d) =	e) >	
f) <	g) <	h) >	i) <	j) <	

A.	Box the	e larger r	umber	of each pai	r.				6 marks
	a)	9 784	7 892			b) 56 663	56	566	
	c)	13 204	14 420	)		d) 721 011	72	1 101	
	e)	461 300	416 00	03		f) 2 879 9	21	2 987 721	
B.	Arrang	ge these n	umerals	s in order f	rom	smallest to	larges	st.	2 marks
	a)	75	754	475	4	7 5	747	5 774	77 575
	b)	18	23 070	429		7 824	37	994	1 120
C.	Write 2 a) c)	> <b>, &lt;. or =</b> 3 678 38 463	in each	<b>blank to n</b> 3 768 3 846	nake	a <b>true stat</b> b) 14 002 d) 10 010	ement	14 000 10 010	4 marks
	Answers	to Topic I	): Self-Te	est					
	<b>A.</b> a) 9 784	Ļ	b) 5	6 663	c)	14 420	d) 7	21 101	
	e) 461 3	800	f) 2	2 987 721					
	<ul> <li><b>B.</b></li> <li>a) 47, 7</li> <li>b) 18, 3</li> </ul>	5, 475, 754 7, 429, 994	, 5 747, 5 , 1 120, 7	774, 77 575 824, 23 070					
	<b>C.</b> a) <		b) >	>	c)	>	d) =		

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

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	



_		-			_	_	-			_	_		_	_	_	_	_	_	_	i		
																						1
	Г			Γ.						Г												ŀ
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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: 300, 348 and 400.

300

						Г	Τ												
			<b>—</b>			Г	Т	Т	Г	Г									
						Г	Т												
							T												
																			_
					1	Г	Т												
					1	Г	Τ												
						Г	Τ												
		<b>_</b>	Γ.		1		1	1						<b>_</b>					

348

400

F	-	-	-	-	-	-	$\vdash$	-	-		F	-	F	-	_	-	-	-		-		_	-	-	-	-	-	+	+	+	-	F	+	+	+	+	+	Ŧ	$\left  \right $	-	F
F	-	-	-	-		-	F	-	-		F	-	-		_	-	-	-	-	-		-	-	-	-	-	-	-	-	+	-	F	+	+	+	+	+	Ŧ	-	-	
-	-	H				-	-	+	-		⊢	-	-	H		-	-		-			H		+	+	+	+	+	+	+	-	F	+	+	+	+	+	+	+		
							F	t			F																	+	1			F	t	+	+	t	t	t	t		
																																L									

Is 348 closer to 300 or 400? It is closest to **300.** 

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 **300**.

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

600

#### 650



Is 650 closer to 600 or 700? It is closer to **700**.

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

If we round 650 to the nearest hundred, the result would be 700.

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 <u>5</u> hundreds and <u>6</u> hundreds.

**584** is closer to <u>6</u> hundreds.

Rounded number is <u>600</u>.

# **Exercise One** Round each number to the nearest 100. Check your work using the answer key at the end of the exercise.

- a) 232 is between \_\_\_\_\_ hundreds and \_\_\_\_\_ hundreds.
  - 232 is closest to \_\_\_\_\_ hundreds.

Rounded number	r is
----------------	------

- b) 647 is between \_\_\_\_\_ hundreds and \_\_\_\_\_ hundreds.
  - 647 is closest to \_\_\_\_\_ hundreds.

Rounded number	r is	
----------------	------	--

- c) **881** is between \_\_\_\_\_ hundreds and \_\_\_\_\_ hundreds.
  - **881** is closest to \_\_\_\_\_ hundreds.
  - Rounded number is \_\_\_\_\_.
- d) **152** is between \_\_\_\_\_ hundreds and \_\_\_\_\_ hundreds.
  - 152 is closest to \_\_\_\_\_ hundreds.

Rounded number is \_\_\_\_\_.

e) **326** is between \_\_\_\_\_ hundreds and \_\_\_\_\_ hundreds.

326 is closest to		hundreds.
-------------------	--	-----------

Rounded number is	
-------------------	--

f) 274 is between \_\_\_\_\_ hundreds and \_\_\_\_\_ hundreds.
274 is closest to \_\_\_\_\_ hundreds.
Rounded number is \_\_\_\_\_.

g) 550 is between \_\_\_\_\_ hundreds and \_\_\_\_\_ hundreds.
550 is closest to \_\_\_\_\_ hundreds.
Rounded number is \_\_\_\_\_.

h) 992 is between \_\_\_\_\_ hundreds and \_\_\_\_\_ hundreds.
992 is closest to \_\_\_\_\_ hundreds.

Rounded number is \_\_\_\_\_.

i) 479 is between \_\_\_\_\_ hundreds and \_\_\_\_\_ hundreds.

479 is closest to \_\_\_\_\_ hundreds.

Rounded number is \_\_\_\_\_.

j) **712** is between \_\_\_\_\_ hundreds and \_\_\_\_\_ hundreds.

712 is closest to \_\_\_\_\_ hundreds.

Rounded number is \_\_\_\_\_.

	Number	Closer to hundreds	Rounded Number
k)	43	0 hundreds	0
1)	188		
m)	275		
n)	620		
0)	750		
p)	549		
q)	499		
r)	821		
s)	999		

Ans a)	swers to Exercise One 2 hundreds 200	b)	6 hundreds 600	c)	9 hundreds 900	d)	2 hundreds 200
e)	3 hundreds 300	f)	3 hundreds 300	g)	6 hundreds 600	h)	10 hundreds 1 000
i)	5 hundreds 500	j)	7 hundreds 700	k)	0 hundreds 0	1)	2 hundreds 200
m)	3 hundreds 300	n)	6 hundreds 600	0)	8 hundreds 800	p)	5 hundreds 500
q)	5 hundreds 500	r)	8 hundreds 800	s)	10 hundreds 1 000		

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. $\underline{4}68$

Step 2: Look at the digit following in the tens place.  $\downarrow$ 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.
  - $\begin{array}{c} \downarrow \\ \underline{329} \\ \underline{329} \\ \underline{846} \\ \underline{846} \\ \underline{608} \\ \underline{608} \end{array} rounds to 600 \\ \end{array}$ 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) 852 rounds to 900 964 rounds to 1 000 (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 **0** the numbers from 50 to 99 round to **100.** 

## **Exercise Two**

Round your answer to the nearest hundred. Check your work using the answer key at the end of the exercise.



Any number can be rounded to the nearest hundred.

 $4 \underbrace{827}_{\approx} 4 800 \qquad 92 \underbrace{659}_{\approx} 92 7003 \underbrace{975}_{\approx} 4 000$ 



Answers to Exercise Two								
a) 400	b) 400	c) 600	d) 100	e) 0	f) 200			
g) 1 000	h) 400	i) 700	j) 800	k) 8 400	1) 2 100			
m) 21 600	n) 43 000	o) 125 400	p) 12 700	q) 3 900	r) 9 100			

# **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 0 000, 1 000, 2 000, 3 000, 4 000, 5 000, 6 000, 7 000, 8 000, or 9 000.

When rounding to the nearest thousand, do this:

**Step 1**: Underline the thousands place.  $\underline{4}$  398

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

↓ <u>4</u> 398

•

### 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. 4398 rounds to 4 000 (4 398 is nearer to 4 000 than to 5 000) 325263 rounds to 325 000

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

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

 $\downarrow 2 884$ rounds to **3** 000 (2884 is nearer to 3 000 than to 2 000)  $\downarrow 86583$ rounds to **87** 000  $\downarrow 29 965$ rounds to **30** 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 1 000.

## **Exercise Three**

Round your answer to the nearest thousand. Check your work using the answer key at the end of the exercise.



Answers to Exercise Three										
a) 4 000	b)	2 000	c)	8 000	d)	5 000	e)	10 000	f)	0
g) 2 000	h)	24 000	i)	45 000	j)	8 000	k)	124 000	1)	92 000
m) 1 000	n)	81 000	o)	15 000	p)	74 000	q)	41 000	r)	53 000
s) 830 000	t)	1 624 000								

# **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 0 000, 10 000, 20 000, 30 000, 40 000, 50 000, 60 000, 70 000, 80 000, or 90 000.

When rounding to the nearest ten thousand, do this:

**Step 1**: Underline the ten thousands place.  $\underline{42}$  398

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

↓ <u>4</u>2 398

### 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. 42 398 rounds to 40 000 (42 398 is nearer to 40 000 than to 50 000)

253 263 rounds to 250 000

### 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.

 $\begin{array}{c}
\downarrow \\
\underline{28} 884 \text{ rounds to } 29\ 000\ (28\ 884 \text{ is nearer to } 29\ 000\ \text{than to } 28\ 000) \\
\downarrow \\
\underline{867} 583 \text{ rounds to } 870\ 000 \\
\downarrow \\
299\ 965 \text{ rounds to } 300\ 000
\end{array}$ 

**Note**: If you are rounding to the nearest ten thousand, one, two, three and fourdigit numerals round like this:

numerals from 0 to 4 999 round to **0** 

numerals from 5 000 to 9 999 round to **10 000**.

## **Exercise Four**

Round your answer to the nearest ten thousand. Check your work using the answer key at the end of the exercise.



An	swers to Ex	erci	se Four								
a)	50 000	b)	10 000	c)	90 000	d)	50 000	e)	10 000	f)	0
g)	20 000	h)	20 000	i)	50 000	j)	10 000	k)	120 000	1)	90 000
m)	40 000	n)	80 000	o)	10 000	p)	70 000	q)	40 000	r)	50 000
s)	830 000	t)	1 620 000								

# **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 000 000, 100 000, 200 000, 300 000, 400 000, 500 000, 600 000, 700 000, 800 000, or 900 000.

```
When rounding to the nearest hundred thousand, do this:
Step 1: Underline the hundred thousands place.
            414 398
Step 2: Look at the digit following in the ten thousands place.
            414 398
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.
               T
              414 398 rounds to 400 000
                       (414 398 is nearer to 400 000 than to 500 000)
            536 263 rounds to 500 000
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.
              Ţ
             281 884 rounds to 300 000
```

**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 49 999 round to **0** 

numerals from 50 000 to 99 999 round to 100 000.

## **Exercise Five**

Round your answer to the nearest hundred thousand. Check your work using the answer key at the end of the exercise.



Answers to Exercise Five							
a) 100 000	b) 0 c	) 900 000 d)	500 000 e) 100 000	f) 400 000			
g) 200 000	h) 300 000 i)	j 500 000 j)	100 000 k) 100 000	1) 100 000			
m) 400 000	n) 800 000 o	) 100 000 p)	700 000 q) 400 000	r) 500 000			
s) 800 000	t) 1 600 000						

# **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 000 000, 1 000 000, 2 000 000, 3 000 000, 4 000 000, 5 000 000, 6 000 000, 7 000 000, 8 000 000, or 9 000 000.

### When rounding to the nearest million, do this:

**Step 1**: Underline the **millions** place.  $\underline{4}$  214 398

Step 2: Look at the digit following in the hundred thousands place. 4 214 398

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.
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<u>5</u> 367 263 rounds to 5 000 000

### 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.

 <sup>1</sup>/<sub>2</sub> 818 884 rounds to 3 000 000
 (2 818 884 is nearer to 3 000 000 than to 2 000 000)
 <sup>6</sup>/<sub>2</sub> 729 583 rounds to 7 000 000
 <sup>1</sup>/<sub>9</sub> 991 965 rounds to 10 000 000

**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 499 999 round to **0** numerals from 500 000 to 999 999 round to **1 000 000**.



Answers to Exercise Six										
a) 2 000 000	b)	5 000 000	c)	3 000 000	d)	8 000 000	e)	3 000 000	f)	0
g) 9 000 000	h)	1 000 000	i)	8 000 000	j)	7 000 000	k)	6 000 000	1)	2 000 000
m) 5 000 000	n)	3 000 000	o)	1 000 000	p)	1 000 000	q)	3 000 000	r)	5 000 000
s) 2 000 000	t)	2 000 000								

# **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 1 094 baseball cards. Adamo has 2 106 baseball cards. Ho has 1 589 baseball cards. Round each number to the nearest 100.

Name	Number	Rounded Number			
Juan	1 094	1 100			
Adamo	2 106	2 100			
Но	1 589	1 600			

a) On Friday, 5 479 people went the football game. On Saturday, 4 388 people went to the football game. On Sunday 4 834 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 5 956 meters. Mount Waddington is the highest mountain in British Columbia. It is 4 019 meters. Mount Columbia is the highest mountain in Alberta. It is 3 741 meters. Round each number to the nearest hundred.

Mountain	Number	Rounded Number
Mount Logan		
Mount Waddington		
Mount Columbia		

c) The Connaught Tunnel is 8 082 meters long, The Mount MacDonald Tunnel is 14 700 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 Tunnel		
Deas Island Tunnel		
d) The area of British Columbia is 944 735 square kilometers. The area of Alberta is 661 848 square kilometers. The area of Saskatchewan is 651 036 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 4 455 200 people. The population of Ontario is 13 069 200 people. The population of Quebec is 7 828 900. Round each number to the nearest hundred thousand.

Province	Number	Rounded Number
British Columbia		
Ontario		
Quebec		

f) In 2009, the population of Denmark was 5 534 738. The population in Norway is 4 876 100. The population in Ireland is 4 459 300. Round each number to the nearest million.

Country	Number	Rounded Number
Denmark		
Norway		
Ireland		

Day	Number	<b>Rounded Number</b>
Friday	5 479	5 500
Saturday	4 388	4 800
Sunday	4 834	4 800
Mountain	Number	Rounded Number
Mount Logan	5 965 meters	6 000 meters
Mount Waddington	4 019 meters	4 000 meters
Mount Columbia	3 741 meters	3 700 meters
Terreral	Number	Darrada I Narrada ar
Tunnel	Number	Kounded Number
Connaught Tunnel	8 082 meters	8 000 meters
Mount MacDonald Tunn	el 14 700 meters	15 000 meters
Deas Island Tunnel	692 meters	1 000 meters
Province	Number	Pounded Number
British Columbia	944 735 square meters	940 000 square meters
Alberta	661 848 square meters	660 000 square meters
Saskatchewan	651 035 square meters	650 000 square meters
	-	
Province	Number	Rounded Number
British Columbia	4 455 200 people	4 500 000 people
Ontario	13 069 200 people	13 100 000 people
Quebec	7 828 900 people	7 800 000 people
Country	Number	Rounded Number
Denmark	5 534 738 people	6 000 000 people
Norway	4 876 100 people	5 000 000 people

Fundamental Mathematics

А.	Round	l your answer to the nearest hu	ndro	ed.	4 marks
	a)	329 ≈	b)	2 481 ≈	
	c)	8 065 ≈	d)	3 916 ≈	
B.	Round	l your answer to the nearest tho	usa	ind.	4 marks
	a)	5 521 ≈	b)	21 813 ≈	
	c)	46 499 ≈	d)	34 860 ≈	
C.	Round	l your answer to the nearest ten	tho	ousand. 4 marks	
	a)	15 521 ≈	b)	26 318 ≈	
	c)	176 994 ≈	d)	864 860 ≈	
D.	Round	l your answer to the nearest hu	ndro	ed thousand.	4 marks
	a)	523 521 ≈	b)	821 932 ≈	
	c)	761 949 ≈	d)	464 051 ≈	
E.	Round	l your answer to the nearest mil	lion	1.	4 marks
	a)	7 312 908 ≈		b) 6 009 280 ≈	
	c)	9 152 801 ≈		d) 576 679 ≈	

### F. For each problem, round to the number asked.

 a) The longest river in North America is the Mississippi River which is 6 275 kilometers long. The longest river in Canada is the Mackenize River which is 4 242 kilometers long. The Yukon River is 3 701 kilometers long. The St. Lawrence River is 3 058 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 13 831 900. The population of Moscow, Russia was 10 508 971. The population of New York City, United States of America was 8 363 710. The population of Vancouver, Canada was 578 041. 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				
<b>A.</b> a) 300	b)	2 500	c)	8 100	d)	4 000
<b>B.</b> a) 6 000	b)	22 000	c)	46 000	d)	35 000
<b>C.</b> a) 20 000	b)	30 000	c)	180 000	d)	860 000
<b>D.</b> a) 500 000	b)	800 000	c)	800 000	d)	500 000
<b>E.</b> a) 7 000 000	b)	6 000 000	c)	9 000 000	d)	1 000 000

F.

a)

River	River Number	
Mississippi River	6 275 kilometers	6 300 kilometers
Mackenzie River	4 242 kilometers	4 200 kilometers
Yukon River	3 701 kilometers	3 700 kilometers
St. Lawrence River	3 058 kilometers	3 100 kilometers

b)

City	Number	Rounded Number	
Shanghai, China	13 831 900 people	13 800 000 people	
Moscow, Russia	10 508 971 people	10 500 000 people	
New York City, USA	8 363 710 people	8 400 000 people	
Vancouver, Canada	578 041 people	600 000 people	

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 <u>underlined</u> digit.

a)	4 3 <u>9</u> 2	b) 7	6 <u>5</u>
c)	18 293	d) 5	6 428
e)	3 <u>6</u> 41 758	f) 4	<u>2</u> 6 153
g)	<u>8</u> 429 576	h) <u>4</u>	.258

# B. Using the number below, write the digit that is in each of the following place values.

### 349 285 106

a)	millions		b)	ones	
c)	ten thousands _		d)	thousands	
e)	hundreds		f)	hundreds thousa	inds
g)	tens				
Under	<u>line</u> the digit for	the place va	lue n	amed.	
<u>Under</u> a) hu	<u>line</u> the digit for ndreds	the place va	<b>lue n</b> b) t	amed. tens	8 703
Under a) hu c) ter	<u>line</u> the digit for ndreds a thousands	<b>the place va</b> 5 321 34 891	luen b)t d)ł	a <b>med.</b> tens hundred thousands	8 703 891 402

C.

2.	
	a) 818
	b) 1 678
	c) 29 764
	d) 1 984 152
	e) 42 803
	f) 226 917
E.	Write the numerals for these word names.
	a) twenty-five thousand one hundred thirty-two
	b) one thousand two hundred seven

### **D.** Write the word names for the numbers.

	c) two hundred fifteen thousand twenty-four	
	d) one million six hundred ninety-five thousand four hundred twenty	_
	e) seven hundred twenty-six	
	f) nine thousand four	
F.	Write each number in expanded form.	
	a) 184	
	b) 3 908	
	c) 61 281	
	d) 1 539 587	
	e) 366 524	

G.	Write	each number from expanded form.
	a)	50 000 + 6 000 + 600 + 90 + 8
	b)	200 000 + 70 000 + 8 000 + 200 + 60 + 1
	c)	3 000 + 800 + 80 + 5
	d)	$1\ 000\ 000\ +\ 400\ 000\ +\ 70\ 000\ +\ 6\ 000\ +\ 100\ +\ 50\ +\ 3$
	e)	700 + 1

H. Arrange these numbers in order from smallest to largest.

a)	18	34 937	727	1 487	147 832
b)	769	6 790	697	76 976	76 796

I.	Wı	rite <, >, or = in	each blank as n	eed	ed.	
	a)	9 698	6 899	b)	7 542	7452
	c)	34 682	39 421	d)	124 693	124 693
	e)	738 423	783 423	f)	45 832	54 123
J.	Rou	nd each number	to the nearest h	unc	lred.	
	a)	774 ≈		b)	2 581 ≈ <u> </u>	
	c)	21 204 ≈		d)	692 ≈	
	e)	572 098 ≈		f)	7 652 931 ≈	
K.	Ro	und each numbe	er to the nearest	tha	ousand	
	a)	948 ≈		b)	75 767 ≈	
	c)	288 869 ≈		d)	479 ≈	
	e)	3 976 ≈		f)	5 012 ≈	
L.	Ro	und each numbe	er to the nearest	ten	thousand.	
	a)	4 028 ≈		b)	226 917 ≈	
	c)	126 804 ≈		d)	9 794 487 ≈	

	e)	87 805 ≈		f)	5 912 ≈	
--	----	----------	--	----	---------	--

# M. Round each number to the nearest hundred thousand. a) $687\ 029 \approx$ b) $1\ 326\ 876 \approx$ c) $523\ 715 \approx$ d) $4\ 766\ 883 \approx$ e) $8\ 182\ 390 \approx$ f) $792\ 013 \approx$

### N. Round each number to the nearest million.

a)	1 009 627 ≈	b)	28 101 052 ≈
c)	894 063 ≈	d)	9 778 656 ≈
e)	80 379 591 ≈	f)	3 102 975 ≈

### O. Word Problems.

 a) The three heaviest sharks are the whale shark weighing 30 500 kilograms. The basking shark weighing 9 258 kilograms. The great white shark weighing 3 507 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 785 753 square kilometers, Baffin Island covering 503 944 square kilometers and Honshu Island covering 227 413 square kilometers. Round each number to the nearest ten thousand.

Island	Number	Rounded Number
New Guinea		
Baffin Island		
Honshu Island		

An	swers to Unit 1 R	evie	w – Number Sens	se			
Α.							
a)	tens	b)	ones	c)	thousands	d)	hundreds
e)	hundred thousand	s f)	ten thousands	g)	millions	h)	thousands
_							
<b>B.</b>	2	<b>b</b> )	6		0	<b>d</b> )	5
a) e)	2	D) f)	0 2	c) g)	8	u)	5
0)	1	1)	2	6)	0		
C.							
a)	5 <u>3</u> 21	b)	8 7 <u>0</u> 3	c)	<u>3</u> 4 891	d)	<u>8</u> 91 402
e)	7 <u>2</u> 491	f)	<u>4</u> 201 856				
Л							
ມ. າ)	aight hundred aig	htaat					
a) b)	one thousand six	hund	red seventy-eight				
c)	twenty-nine thous	and	seven hundred six	tv-fc	our		
d)	one million nine l	nund	red eighty-four the	ousa	nd one hundred fifty-t	wo	
e)	forty-two thousan	d eig	the state st				
f)	two hundred twen	ty-si	x thousand nine h	undr	ed seventeen		
E.	25.122	1 \	1 207		215.024	1\	1 (05 100
a)	25 132 726	b) f)	1 207	c)	215 024	d)	1 695 420
e)	720	1)	9 004				
F.							
a)	100 + 80 + 4						
b)	3 000 + 900 + 8	5					
c)	$60\ 000\ +\ 1\ 000$	+ 20	00 + 80 + 1				
d)	1 000 000 + 500	000	+ 30 000 + 9 00	)0 +	500 + 80 + 7		
e)	300 000 + 60 00	0 +	6 000 + 500 +	20 +	- 4		
C							
<b>୯.</b> a)	56 698	b)	278 261	c)	3 885	d)	1 476 153
e)	701	0)	270 201	0)	5 005	u)	1 110 155
.,							
H.							
a)	18, 727, 1487,	34 93	37, 147 832				
b)	697, 769, 6790,	76	796, 76 976				
T							
<b>I.</b>		b)	~			d)	_
a) e)	<	f)	<	0)		u)	_

J.							
a)	800	b)	2 600	c)	21 200	d)	700
e)	572 100	f)	7 652 900				
K.							
a)	1 000	b)	76 000	c)	289 000	d)	0
e)	4 000	f)	5 000				
L.							
a)	0	b)	230 000	c)	130 000	d)	9 790 000
e)	90 000	f)	10 000				
M.							
a)	700 000	b)	1 300 000	c)	500 000	d)	4 800 000
e)	8 200 000	f)	800 000				
N.							
a)	1 000 000	b)	28 000 000	c)	1 000 000	d)	10 000 000
e)	80 000 000	f)	3 000 000				

### 0.

a)

Shark	Number	Rounded Number
Whale shark	30 500	31 000
Basking shark	9 258	9 000
Great White Shark	3507	4 000

b)

Kilometers	Number	Rounded Number
New Guinea	785 753	790 000
Baffin Island	503 944	500 000
Honshu Island	227 413	230 000

## **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!