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. Many people   are afraid of math. They fear making a mistake. "Math anxiety" is the fear of math.

People who suffer from math anxiety may get headaches, sick stomachs, cold hands or they may just sweat a lot or just feel scared.

Do you suffer from math anxiety?

Read the list below and put a check mark (√) beside the ones you feel.

	Are your palms moist?
	Is your stomach fluttering?
	Do you feel like you can't think clearly?
	Do you feel like you would rather do anything else than learning math?
	Are you breathing faster than normal?
	Is your heart pounding?
	Do you feel cold?

Add any other things you are feeling.

Math Anxiety

"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.   It may be from doing badly on a test or asking a question then being made fun of. These bad memories can make learning math hard.

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.

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: Counting

To learn to read, you first need to learn the letters of the alphabet. Once you know the alphabet, you put the letters together to make words, then sentences, then paragraphs and then stories. Those letters become the "tools" used to write everything.

The same is true for math. In math we use **digits**. The **digits** are:

<div align="center">

0   1   2   3   4   5   6   7   8   9

</div>

Digits are named after our fingers. Our fingers are also called digits. The mathematics term comes from the days of counting on our fingers. We have ten fingers and there are ten digits. We use the letters of the alphabet to make up words, and we use digits to make up numbers. There are two ways to write numbers. You can write them as numerals. You can write them using word names.

Numeral	Word Name
0	zero
1	one
2	two
3	three
4	four
5	five
6	six
7	seven
8	eight
9	nine

Counting is matching the number name to the things being counted. You see a bowl of apples on the table. You want to know how many apples are in the bowl. You answer that question by saying "There are one, two, three, four apples." You are giving the number names "one", "two", "three," and "four" to the apples. The last number you say is the total number of apples.

Exercise One

Count the number of shapes in each picture. Then write the numeral and the word name. Check your work using the answer key at the end of the exercise.

Example:

Numeral: 3
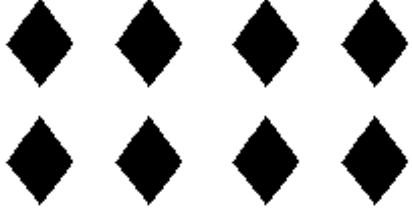Word name: three

a)

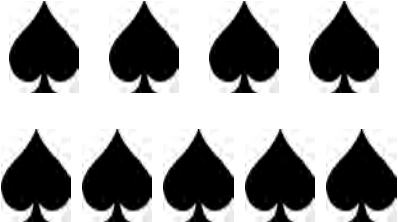Numeral:

Word Name:

b)

Numeral:

Word Name:

c)

Numeral:

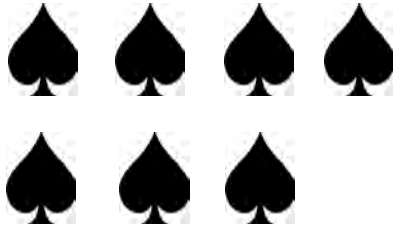Word Name

d)

Numeral:

Word Name:

e)

Numeral:

Word Name:

f)

Numeral:

Word Name:

g)

Numeral:

Word Name:

h)

Numeral:

Word Name:

i)

Numeral:

Word Name:

Need More Practice?

Ask your instructor for the dominoes to do this page.   Take the dominoes zero-zero to five-five. Flip them over so you cannot see the dots. Pick a domino and flip it over. Draw the number of dots then count the number of dots. Write the numeral and word name. Have your instructor check these for you.

Example:
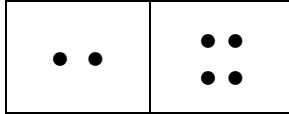
Numeral: 6

Word Name: six
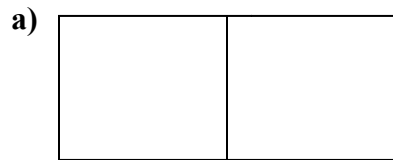
a)

Numeral:

Word Name:

b)

Numeral:

Word Name:

c)

Numeral:

Word Name:

d)

Numeral:

Word Name:

e)

Numeral:

Word Name:

f)
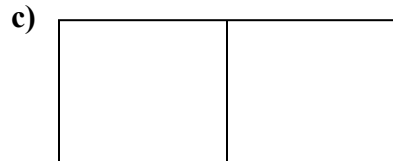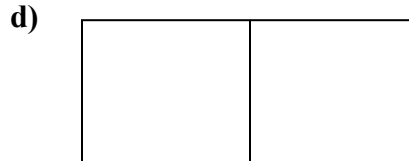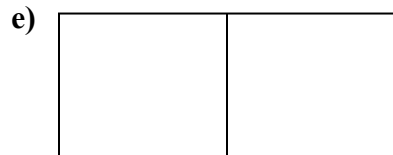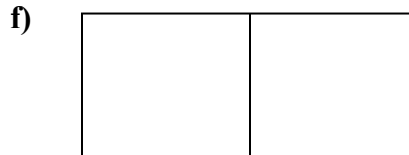
Numeral:

Word Name:

Exercise Two

Here are the numerals from one to ten.

1	2	3	4	5	6	7	8	9	10

Practice writing them below.

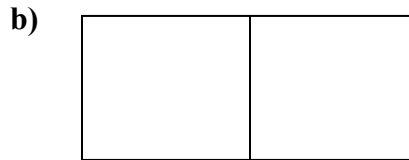|									

Now practice writing the numerals from one to ten in the following. Try to do them without looking. Check your work using the answer key at the end of the exercise.

a)

1		3		5		7		9	

b)

	2		4		6		8		10

c)

1			4			7			

d)

		3			6			9	

e)

| 1 | | | 4 | | | 7 | | | |

f)

| 1 | | | | 5 | | | | 9 | |

g)

| 1 | | | | | 6 | | | | |

h)

| | | | | 5 | | | | | |

i)

| | | | | | | | | | |

Answers to Exercise Two

a)

	2		4		6		8		10

b)

1		3		5		7		9	

c)

	2	3		5	6		8	9	10

d)

1	2		4	5		7	8		10

e)

	2	3		5	6		8	9	10

f)

	2	3	4		6	7	8		10

g)

	2	3	4	5		7	8	9	10

h)

1	2	3	4		6	7	8	9	10

i)

1	2	3	4	5	6	7	8	9	10

Topic B: Self-Test   Mark   /18   Aim 15/18

A. Count the number of things in each picture, then write the numeral and the word name.   **8 marks**

a)

Numeral:

Word Name:

b)

Numeral:

Word Name:

c)

Numeral:

Word Name:

d)
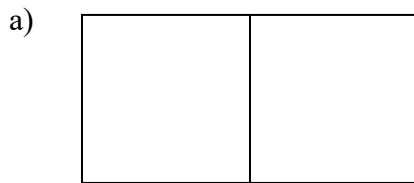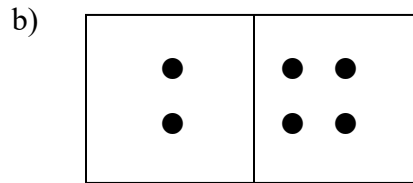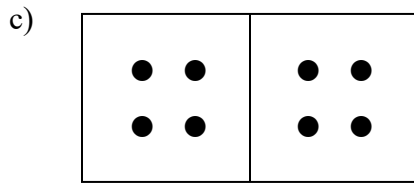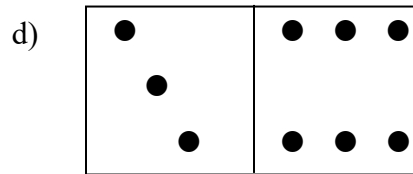
Numeral:

Word Name:

B. Write the numerals from one to 10.   **10 marks**

Emotions Check

How are you feeling? Are your palms moist? How is your breathing?
Take control. Be the boss. If you are feeling anxious, practice your breathing exercise.

Remember: breathe in slowly to the count of four, hold it for the count of four and breathe out slowly to the count of four.

Topic C: Place Value

As you know, we count much higher than ten in our world.

Each **place** in a number has a **value.**

- The **ones place** tells how many ones there are.

  3 means 3 ones

  0 means 0 ones

  9 means 9 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.**
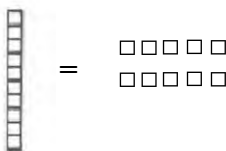
  43 means 4 tens and 3 ones
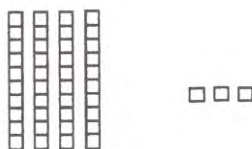
  20 means 2 tens and 0 ones. The zero holds the ones place.

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

Exercise One   Fill in the blanks to make each sentence true. Draw a picture for questions **c, f, h and j** like the examples. Check your work using the answer key at the end of the exercise. Ask your instructor to check your sketches.

Example: 49 means ___4___ tens and ___9___ ones
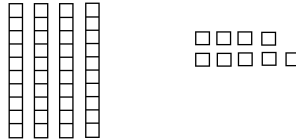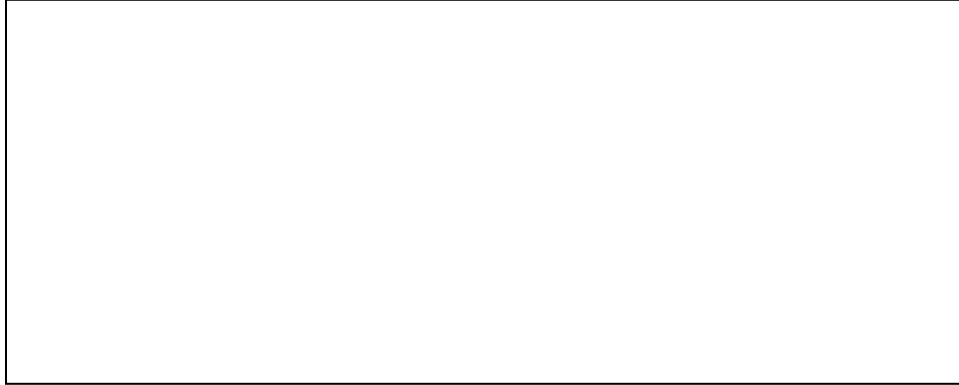
a) 37 means _____ tens and _____ ones.

b) 65 means _____ tens and _____ ones.

c) 56 means _____ tens and _____ ones.

(Draw your picture below.)
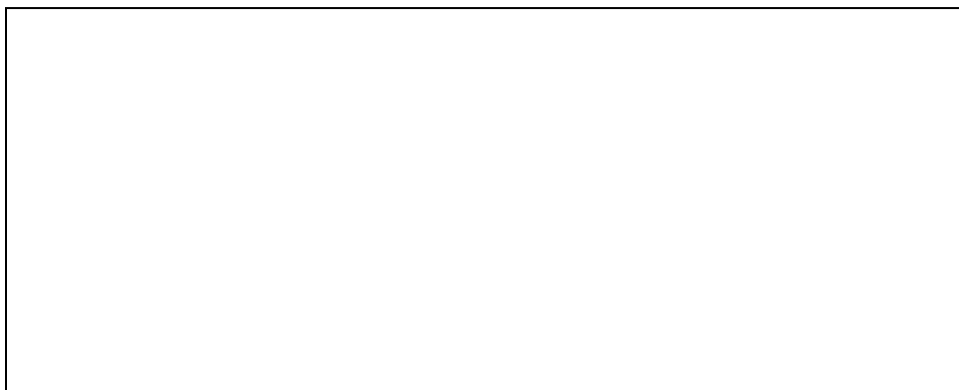
d) 87 means _____ tens and _____ ones.

e) 33 means _____ tens and _____ ones.

f) 60 means _____ tens and _____ ones.

(Draw your picture below.)

g) 70 means _____ tens and _____ ones.

h) 44 means _____ tens and _____ ones.

(Draw your picture below.)
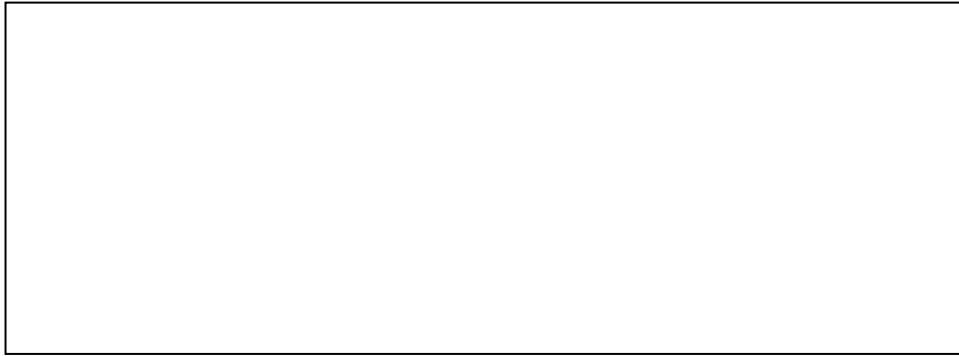
i) 98 means _____ tens and _____ ones.

j) 75 means _____ tens and _____ ones.

(Draw your picture below.)

Exercise One – Answer Key

a) 3 tens, 7 ones   b) 6 tens, 5 ones   c) 5 tens, 6 ones

d) 8 tens, 7 ones   e) 3 tens, 3 ones   f) 6 tens, 0 ones

g) 7 tens, 0 ones   h) 4 tens, 4 ones   i) 9 tens, 8 ones

j) 7 tens, 5 ones

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.
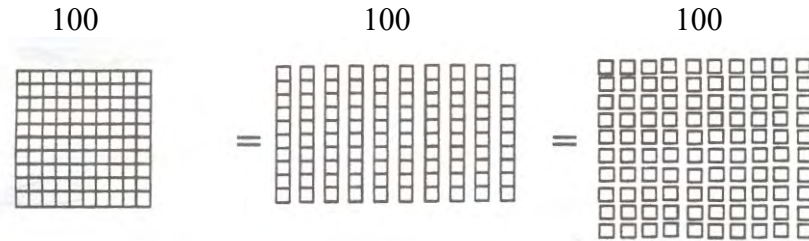
425 means 4 hundreds, 2 tens, and 5 ones.
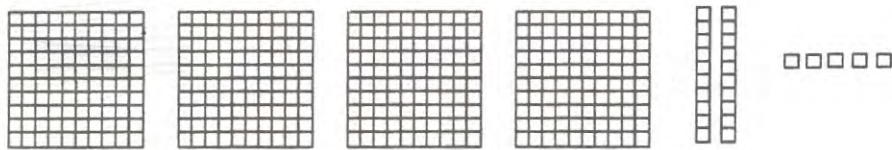
354 means 3 hundreds, 5 tens, and 4 ones.
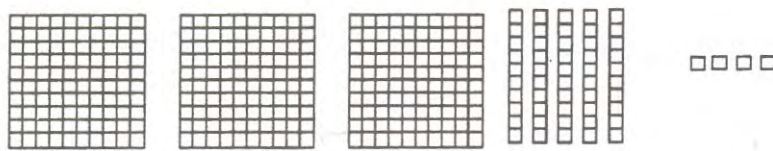
Exercise Two

Fill in the blanks to make each sentence true. Draw a picture for questions **c, e, and h,** like the examples. Check your work using the answer key at the end of the exercise. Ask your instructor to check your sketches.

a) 190 = _____1_____ hundreds, _____9_____ tens, _____0_____ ones

b) 555 = _____ hundreds, _____ tens, _____ ones

c) 309 = _____ hundreds, _____ tens, _____ ones
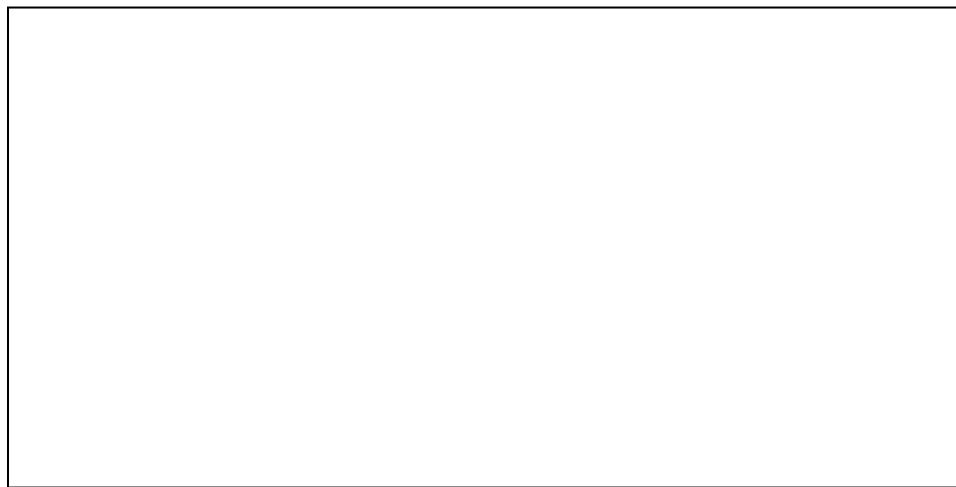
(Draw your picture below.)
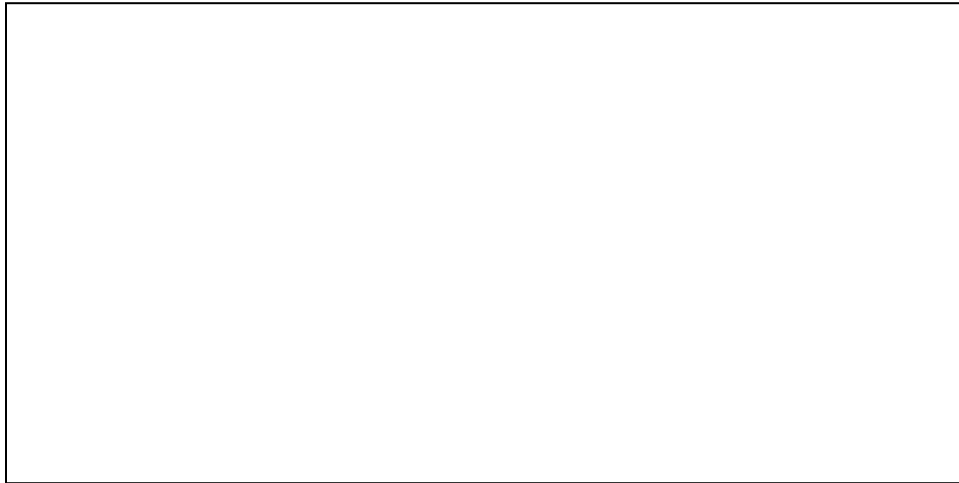
d) 499 = _____ hundreds, _____ tens, _____ ones

e) 480 = _____ hundreds, _____ tens, _____ ones

(Draw your picture below.)
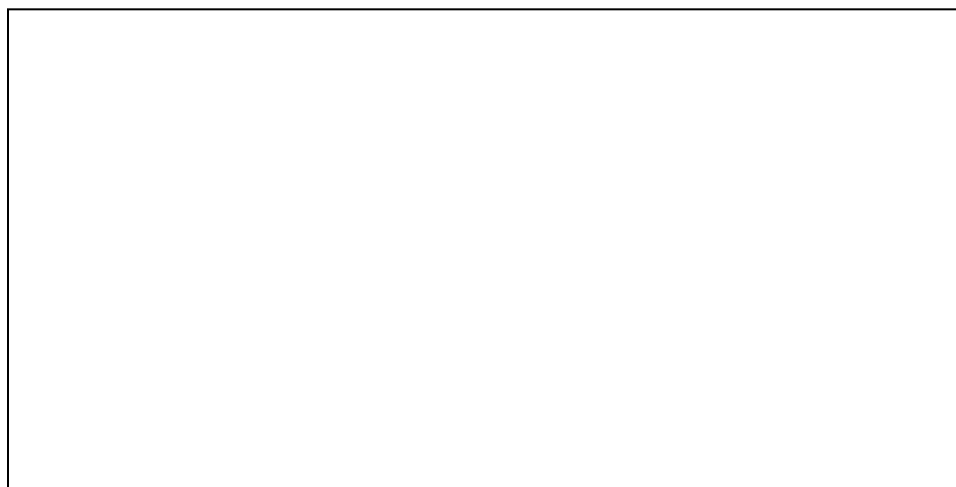
f) 999 = _____ hundreds, _____ tens, _____ ones

g) 657 = _____ hundreds, _____ tens, _____ ones

h) 125 = _____ hundreds, _____ tens, _____ ones

(Draw your picture below.)
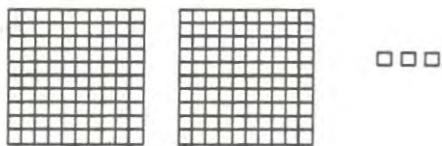
i) 212 = _____ hundreds, _____ tens, _____ ones

Answers to Exercise Two
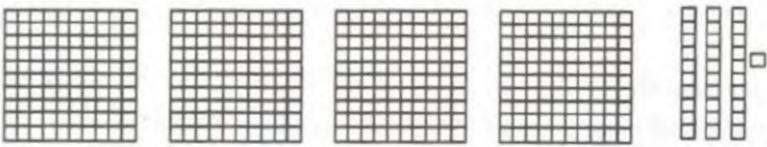
b) 5 hundreds, 5 tens, 5 ones   c)   3 hundreds, 0 tens, 9 ones

d) 4 hundreds, 9 tens, 9 ones   e)   4 hundreds, 8 tens, 0 ones

f) 9 hundreds, 9 tens, 9 ones   g)   6 hundreds, 5 tens, 7 ones

h) 1 hundred, 2 tens, 5 ones   i)   2 hundreds, 1 ten, 2 ones

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Exercise Three

Count the hundreds, tens, and ones shown in the drawings. The pictures will help you understand the quantity of a number. Then write the numeral. The first one is done for you. Check your work using the answer key at the end of the exercise.

a)

___2___ hundreds   ___0___ tens   ___3___ ones = ___203___

b)

_____ hundreds   _____ tens   _____ ones = _____

c)
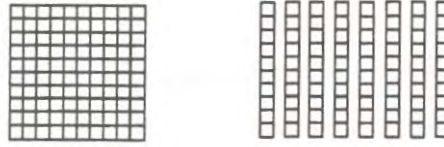
_____ hundreds   _____ tens   _____ ones = _____

d)
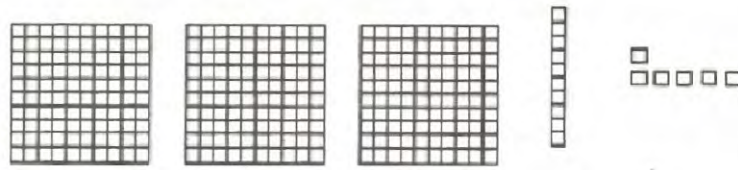
_____ hundreds   _____ tens   _____ ones = _____

e)
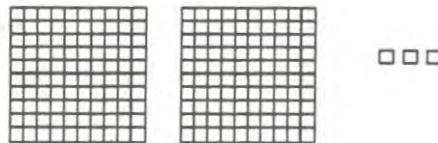
_____ hundreds   _____ tens   _____ ones = _____

Answers to Exercise Three

b) 4 hundreds, 3 tens, 1 one, 431   c) 1 hundred, 8 tens, 0 ones, 180

d) 3 hundreds, 1 ten, 6 ones, 316   e) 2 hundreds, 0 tens, 3 ones, 203

Need more practice?

Ask your instructor for some play money. Using the one, ten and hundred dollar bills practice trading ten of one type of bill for one of the next value.

Example:

ABE Bucks **$1** **One**	**ABE Bucks** **$1** **One**
ABE Bucks **$1** **One**	**ABE Bucks** **$1** **One**
ABE Bucks **$1** **One**	**ABE Bucks** **$1** **One**
ABE Bucks **$1** **One**	**ABE Bucks** **$1** **One**
ABE Bucks **$1** **One**	**ABE Bucks** **$1** **One**

equals

ABE Bucks
$10
Ten
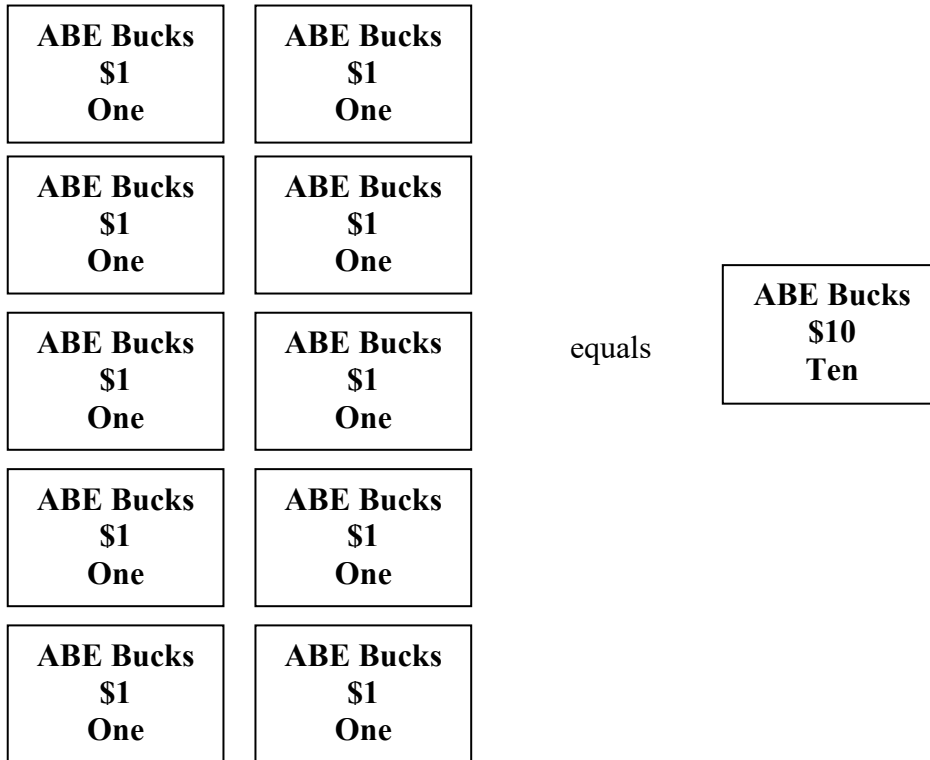
Exercise Four

Write the place value name (ones, tens, hundreds) for each underlined digit. Check your work using the answer key at the end of the exercise.

a) 6̲22   *hundreds*   b) 46̲8   *tens*

c) 92̲0   _____   d) 9̲20   _____

e) 64̲8   _____   f) 42̲6̲   _____

g) 5̲34   _____   h) 55̲5   _____

i) 45̲1   _____   j) 901̲   _____

k) 2̲26   _____   l) 486̲   _____

Answers to Exercise Four

c) ones	d) hundreds	e) tens
f) ones	g) hundreds	h) tens
i) tens	j) ones	k) hundreds
l) ones		

Exercise Five

Underline the digit for the place value named. Check your work using the answer key at the end of the exercise.

a) hundreds   416   b) tens   368

c) tens   364   d) hundreds   456

e) ones   206   f) ones   634

g) hundreds   742   h) hundred   543

i) tens   221   j) ones   100

k) ones   169   l) tens   684

Answers to Exercise Five

a) 4	b) 6	c) 6
d) 4	e) 6	f) 4
g) 7	h) 5	i) 2
j) 0	k) 9	l) 8

Emotions Check

How are you feeling? Are your palms moist? How is your breathing? Take control. Be the boss. If you are feeling anxious, practice your breathing exercise.

Remember: breathe in slowly to the count of four, hold it for the count of four and breathe out slowly to the count of four.

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 numeral
46 is a numeral
3 is a numeral

We use numerals to represent **numbers**.

If we think about language instead of mathematics it will be clearer.

Letters are used to make **words.** We respond to the **meaning** of words.

Digits are the "letters" of math.
Numerals are the "words" of math.
Numbers are the "meaning" of math.

Now you know the place value of digits up to three places. Next you will learn to read and write numerals and number words. Some of the words to read and spell may be new to you.

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 number names for numerals from 13 to 19 are made up of two parts. The first part tells us **how many units**. The second part ("teen") tells us there is also **1 ten**.

13	**thir**teen	**thr**ee units and 1 ten
14	**four**teen	**four** units and 1 ten
15	**fif**teen	**fi**ve units and 1 ten
16	**six**teen	**six** units and 1 ten
17	**seven**teen	**seven** units and 1 ten
18	**eigh**teen	**eight** units and 1 ten
19	**nine**teen	**nine** units and 1 ten

Exercise Six

Write the word name for each number. Try not to look at the list. Check your work using the answer key at the end of the exercise.

a) 8 _____

b) 16 _____

c) 7 _____

d) 15 _____

e) 5 _____

f) 11 _____

g) 9 _____

h) 18 _____

i) 6 _____

j) 17 _____

k) 4 _____

l) 14 _____

m) 12 _____

n) 13 _____

o) 19 _____

p) 3 _____

The word names for the numbers 20 to 90 are also made up of two parts. The first part tells us **how many groups of tens**. The second part ("ty") tells us we are counting **groups of tens** and not something else. The "-ty" may have come from a shortening of the word "ten".

20	twenty	**two** tens
30	thirty	**three** tens
40	forty	**four** tens
50	fifty	**five** tens
60	sixty	**six** tens
70	seventy	**seven** tens
80	eighty	**eight** tens
90	ninety	**nine** tens

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).

Exercise Seven

Write the word names for these numbers. Check your work using the answer key at the end of the exercise.

a) 24   _twenty-four_

b) 35   _thirty-five_

c) 83   _____

d) 46   _____

e) 59   _____

f) 20   _____

g) 71   _____

h) 94   _____

i) 62   _____

j) 53   _____

Answers to Exercise Seven

c)	eighty-three	d)	forty-six	e)	fifty-nine
f)	twenty	g)	seventy-one	h)	ninety-four
i)	sixty-two	j)	fifty-three		

Exercise Eight

Without looking back, write the word names for these numbers.Check your work using the answer key at the end of the exercise.

a) 44   _forty-four_

b) 97   _____

c) 71   _____

d) 86   _____

e) 53   _____

f) 25   _____

g) 15   _____

h) 38   _____

Exercise Nine

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

a) ninety-nine _99_

b) sixty-seven _67_

c) eighty-one _____

d) eighteen _____

e) twenty-six _____

f) thirteen _____

g) thirty _____

h) forty-three _____

i) sixteen _____

j) twenty _____

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.

367 is made of	3 hundreds	6 tens	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!

504 is made of	5 hundreds	0 tens	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!

890 is made of	8 hundreds	9 tens	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!

100 is made of	1 hundreds	0 tens	0 ones
Each is written:	one hundred		
Put the parts together:	**one hundred**		

Remember: empty spaces are not written in words.

Exercise Ten

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

a)

623 is made of			
Each is written:			
Put the parts together:			

b)

364 is made of			
Each is written:			
Put the parts together:			

c)

213 is made of			
Each is written:			
Put the parts together:			

d)

405 is made of			
Each is written:			
Put the parts together:			

e)

820 is made of			
Each is written:			
Put the parts together:			

f) 704 _____

g) 470 _____

h) 993 _____

i) 100 _____

j) 972 _____

Answers to Exercise Ten

a)

623 is made of	6 hundreds	2 tens	3 ones
Each is written:	six hundred	twenty	three
Put the parts together:	six hundred twenty-three		

b)

364 is made of	3 hundreds	6 tens	4 ones
Each is written:	three hundred	sixty	four
Put the parts together:	three hundred sixty-four		

c)

213 is made of	2 hundreds	1 ten	3 ones
Each is written:	two hundred	thirteen	
Put the parts together:	two hundred thirteen		

d)

405 is made of	4 hundreds	0 tens	5 ones
Each is written:	four hundred		five
Put the parts together:	four hundred five		

e)

820 is made of	8 hundreds	2 tens	0 ones
Each is written:	eight hundred	twenty	
Put the parts together:	eight hundred twenty		

f) seven hundred four   g) four hundred seventy

h) nine hundred ninety-three   i) one hundred

j) nine hundred seventy-two

Topic C: Self-Test   **Mark   /17   Aim 14/17**

A. Write the place value for the underlined digit.   **6 marks**

    a) 7<u>6</u>5 _____   b) 9<u>0</u>3 _____

    c) <u>4</u>79 _____   d) 18<u>5</u> _____

    e) 73<u>2</u> _____   f) <u>3</u>97 _____

B. Write the word names for these numerals.   **6 marks**

    a) 79 _____

    b) 492 _____

    c) 378 _____

    d) 820 _____

    e) 405 _____

    f) 583 _____

C. Write the numerals for these word names.   **5 marks**

    a) five hundred forty-seven   _____

    b) three hundred eighty   _____

    c) two hundred seventy-five   _____

    d) four hundred sixteen   _____

    e) nine hundred twenty-three   _____

Answers to Topic C Self-test

A.

a) tens   b) tens   c) hundreds

d) ones   e) ones   f) hundreds

B.

a) seventy-nine   b) four hundred ninety-two

c) three hundred seventy-eight   d) eight hundred twenty

e) four hundred five   f) five hundred eighty-three

C.

a) 547   b) 380   c) 275

d) 416   e) 923

Topic D: Ordering Numerals

We arrange **numerals** in order from smallest to largest. Sorting numbered papers such as order forms, arranging items by the date and comparing prices are some of the ways you use this skill.

Look at two numerals and tell which one is larger. How do you do this?

Exercise One   Draw a box around the larger numeral in each pair.

a)   43   48   b)   27   21   c)   64   63

d)   24   35   e)   92   89   f)   72   81

Answers to Exercise One

b) 27   c) 64   d) 35   e) 92   f)   81

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

Example A: Compare 63 and 59
- Look at the tens place.
    63 has a 6 in the tens place.
    59 has a 5 in the tens place.

63 is larger than 59.

Example B: Compare 496 and 476.
- Look at the hundreds – both have 4's.
- Look at the tens place.
    496 has a 9 in the tens place.
    476 has a 7 in the tens place.

496 is larger than 476.

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 1 001

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)   36   46   b)   580   59   c)   87   67

d)   716   116   e)   429   449   f)   289   283

g)   229   329   h)   230   210   i)   51   159

j)   836   935   k)   36   37   l)   461   468

Answers to Exercise Two			
b) 580	c) 87	d) 716	e) 449
f) 289	g) 329	h) 230	i) 159
j) 935	k) 37	l) 468	

Exercise Three

Draw a box around the larger numeral in each pair. Check your work using the answer key at the end of the exercise.

a) 148 $\boxed{151}$ b) 129   132   c) 34   37

d) 325   236   e) 118   13   f) 489   423

g) 471   422   h) 316   322   i) 876   319

Exercise Three – Answer Key

b) 132	c) 37	d) 325	e) 118
f) 489	g) 471	h) 322	i) 876

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 Four

Arrange these numbers in order from smallest to largest.
Check your work using the answer key at the end of the exercise.

a) 323   32   332   33   3   322   2

_____

b) 44   7   474   47   744   74   77

_____

c) 123   135   152   125

_____

d) 472   427   452   475

_____

Answers to Exercise Four

a) 2, 3, 32, 33, 322, 323, 332   b)   7, 44, 47, 74, 77, 474, 744

c) 123, 125, 135, 152   d)   427, 452, 472, 475

Greater Than, Less Than, Equals

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 point or the tip of the sign is close to the small number.

$$5 < 12 \quad \text{means 5 is less than 12}$$
$$6 > 3 \quad \text{means 6 is greater than 3}$$

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

Exercise Five

Write <, >, or = in each blank as needed. Check your work using the answer key at the end of the exercise.

a) 3 ___<___ 5   b) 8 ___>___ 7

c) 12 _____ 9   d) 28 _____ 28

e) 48 _____ 84   f) 376 _____ 376

g) 520 _____ 530   h) 582 _____ 521

i) 674 _____ 296   j) 214 _____ 251

k) 879 _____ 900   l) 784 _____ 784

Answers to Exercise Five			
c) >	d) =	e) <	f) =
g) <	h) >	i) >	j) <
k) <	l) =		

Topic D: Self-Test   **Mark   /12   Aim   10/12**

A. Box the larger number of each pair.   **6 marks**

    a) 978   789   b) 566   556

    c) 120   142   d) 701   710

    e) 430   403   f) 879   987

B. Arrange these numerals in order from smallest to largest.   **2 marks**

    a) 75   754   475   47   747   574   775

    _____

    b) 18   237   429   824   37   994   112

    _____

C. Write >, <. or = in each blank to make a true statement.   **4 marks**

    a) 678 _____ 768   b) 102 _____ 100

    c) 463 _____ 846   d) 101 _____ 101

Answers to Topic D Self-Test

A. a) 978   b) 566   c) 142
  d) 710   e) 430   f) 987

B. a) 47, 75, 475, 574, 747, 754, 775
  b) 18, 37, 112, 237, 429, 824, 994

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.

_____

_____

_____

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 Ten

A number rounded to the nearest ten will have a zero in the ones place. The number will end with 0, 10, 20, 30, 40, 50, 60, 70, 80, or 90.

When rounding to the nearest 10, we are looking for the closest group of 10.

Example: **20, 23 and 30.**
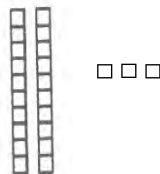
20   **23**   **30**

Is 23 closer to 20 or 30? It is closest to **20**.

Which gives a better estimate of 23…..2 tens or 3 tens. **2 tens**

If we round 23 to the nearest ten, the result would be **20**.

Remember: The rounded number has a zero in the ones place.

Example: **40, 46 and 50**
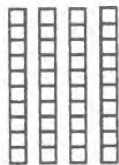
40   **46**   **50**
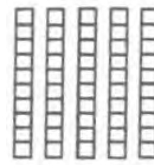
Is 46 closer to 40 or 50? It is closest to **50.**

Which gives a better estimate of 46……4 tens or 5 tens? **5 tens**

If we round 46 to the nearest ten, the result would be **50.**

Example: 60, 65 and 70

| **60** | **65** | **70** |
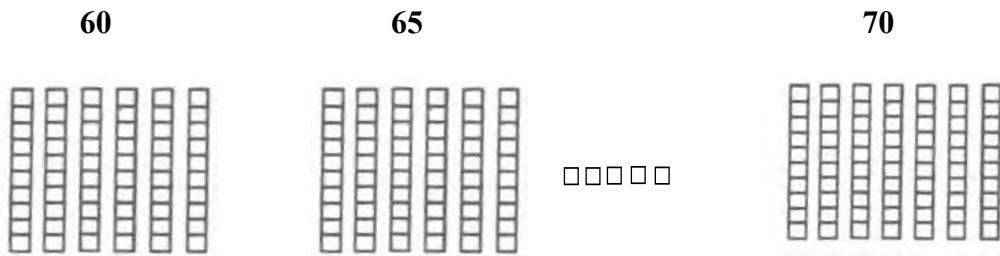
Is 65 closer to 60 or 70? It is closer to **70**.

Which gives a better estimate of 65…… 6 tens or 7 tens? **7 tens**

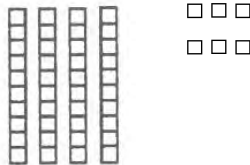When we have a number which ends in 5, we always round up to the next ten. If we round 65 to the nearest 10, the result would be **70**.

Example: Round 32 to the nearest 10.

32 is between 3 tens and 4 tens.

32 is closest to 3 tens.

Rounded number is 30 .

Exercise One

Round each number to the nearest 10. Check your work using the answer key at the end of the exercise.

a)   **47** is between _____ tens and _____ tens.

      47 is closest to _____ tens.

      Rounded number is _____.

b)   **81** is between _____ tens and _____ tens.

      81 is closest to _____ tens.

      Rounded number is _____.

c)   **14** is between _____ tens and _____ tens.

      14 is closest to _____ tens.

      Rounded number is _____.

d) **26** is between _____ tens and _____ tens.

26 is closest to _____ tens.

Rounded number is _____.

e) **98** is between _____ tens and _____ tens.

98 is closest to _____ tens.

Rounded number is _____.

f) **57** is between _____ tens and _____ tens.

57 is closest to _____ tens.

Rounded number is _____.

g) **73** is between _____ tens and _____ tens.

73 is closest to _____ tens.

Rounded number is _____.

h) **2** is between _____ tens and _____ tens.

2 is closest to _____ tens.

Rounded number is _____.

i) **39** is between _____ tens and _____ tens.

39 is closest to _____ tens.

Rounded number is _____.

j) **65** is between _____ tens and _____ tens.

65 is closest to _____ tens.

Rounded number is _____.

k) **18** is between _____ tens and _____ tens.

18 is closest to _____ tens.

Rounded number is _____.

Answers to Exercise One

a) 4 tens, 5 tens
    5 tens
    50

b) 8 tens, 9 tens
    8 tens
    80

c) 1 ten, 2 tens
    1 ten
    10

d) 2 tens, 3 tens
    3 tens
    30

e) 9 tens, 10 tens
    10 tens
    100

f) 5 tens, 6 tens
    6 tens
    60

g) 7 tens, 8 tens
    7 tens
    70

h) 0 tens, 1 ten
    0 tens
    0

i) 3 tens, 4 tens
    4 tens
    40

j) 6 tens, 7 tens
    7 tens
    70

k) 1 ten, 2 tens
    2 tens
    20

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

When **rounding to the nearest ten,** do this:

Step 1: Underline the tens digit.

<u>8</u>3

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

$\downarrow$
<u>8</u>3

Step 3: **If the digit in the ones place is less than 5,**
- write a 0 in the ones place.
- leave the tens digit as it is.

$\downarrow$
<u>4</u>2   rounds to 40 (42 is nearer to 40 than to 50)

$\downarrow$
<u>1</u>4   rounds to 10

$\downarrow$
<u>8</u>3   rounds to 80

Step 4: **If the digit in the ones place is 5 or more,**
- write a 0 in the ones place.
- add one more ten to the tens place.

$\downarrow$
<u>3</u>6   rounds to **40** (36 is nearer to 40 than to 30)

$\downarrow$
<u>2</u>5   rounds to **30**

$\downarrow$
<u>9</u>8   rounds to **10**0 (one more ten than nine tens is ten tens)

Note: If you are rounding to the nearest ten, single digits are rounded like this:

0, 1, 2, 3, 4 all round to **0**.
5, 6, 7, 8, 9 all round to **10**.

When you round a number, use the sign that means "approximately equal" $\approx$

Exercise Two

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

a) 22 ≈ _20_

b) 86 ≈ _90_

c) 31 ≈ _____

d) 96 ≈ _____

e) 84 ≈ _____

f) 55 ≈ _____

g) 8 ≈ _____

h) 2 ≈ _____

i) 63 ≈ _____

j) 49 ≈ _____

k) 25 ≈ _____

l) 71 ≈ _____

m) 38 ≈ _____

n) 51 ≈ _____

o) 88 ≈ _____

Numbers of any size can be rounded to the nearest ten using the method you have just learned.

2$\underline{3}$8 ≈ 240   8$\underline{8}$3 ≈ 880   2$\underline{9}$7 ≈ 300

Exercise Three

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

a) 424 ≈ _____

b) 867 ≈ _____

c) 499 ≈ _____

d) 132 ≈ _____

e) 278 ≈ _____

f) 617 ≈ _____

g) 208 ≈ _____

h) 851 ≈ _____

i) 124 ≈ _____

j) 576 ≈ _____

k) 315 ≈ _____

l) 742 ≈ _____

m) 397 ≈ _____

n) 952 ≈ _____

o) 639 ≈ _____

Answers to Exercise Three

a) 420	b) 870	c) 500
d) 130	e) 280	f) 620
g) 210	h) 850	i) 120
j) 580	k) 320	l) 740
m) 400	n) 950	o) 640

Exercise Four

For each problem, round the numbers to the nearest ten.
Check your work using the answer key at the end of the exercise.

Example: Mei Ling has just moved into a new apartment. She bought the following items. Round each amount to the nearest ten.

Item	Cost	Rounded to nearest ten
Towels	$14	$10
Dishes	$32	$30
Saucepan	$43	$40
Microwave	$109	$110
Carving Knife	$18	$20

a) Akkul walked 12 kilometres on Monday, 26 kilometres on Tuesday and 6 kilometres on Wednesday. Round each number to the nearest ten.

Day	Number	Rounded Number
Monday	12	
Tuesday	26	
Wednesday	6	

b) Werner is a keen bird watcher. On Monday, he saw 57 birds, on Tuesday he saw 124 birds, on Wednesday he saw 31 birds and on Thursday he saw 75 birds. Round each number to the nearest ten.

Day	Number	Rounded Number
Monday		
Tuesday		
Wednesday		
Thursday		

c) Jamir drove 678 kilometres. 493 kilometres, 387 kilometres and 914 kilometres in one
    week. Round each mileage to the nearest ten.

Day	Kilometres	Rounded Number
#1		
#2		
#3		
#4		

d) Koho Industries canned 281 cans of salmon last week and 392 cans of salmon this week.
    They plan to can 438 cans of salmon next. Round each number of cans to the nearest ten.

Week	Cans	Rounded Number
Last week		
This week		
Next week		

e) During one week at the movie theatre there were 423 people on Monday, 328 people of
    Tuesday, 148 people on Wednesday and 523 people on Thursday. Round each number to
    the nearest ten.

Day	People	Rounded Number
Monday		
Tuesday		
Wednesday		
Thursday		

Answers to Exercise Four

a) 10, 30, 10   b) 60, 120, 30, 80   c) 680, 490, 390, 910

d) 280, 390, 440   e) 420, 330, 150, 520

Topic E: Self-Test   Mark   /12   Aim   10/12

A. Round your answer to the nearest ten.   **8 marks**

    a) 47 ≈ _____   b) 123 ≈ _____

    c) 4 ≈ _____   d) 945 ≈ _____

    e) 329 ≈ _____   f) 481 ≈ _____

    g) 865 ≈ _____   h) 916 ≈ _____

B. Round each number to the nearest ten.   **4 marks**

    a) Mary scored 78, 91, 79, 67 and 102 on her arithmetic test. Round her scores to the nearest ten.

Score	Rounded Score

Answers to Topic E Self-Test

A.

a) 50	b) 120	c) 0
d) 950	e) 330	f) 480
g) 870	h) 920	

B.

a)   80, 90, 80, 70, 100

Topic F: More Counting

Practice your counting by filling in the counting chart. Have your instructor check your chart when you are done.

0	1	2	3	4	5	6	7	8	9
10									

If you had a pile of pennies or loonies, you would count by ones in order to find out how much money you have.

Use your counting chart and start at 1. Write down every second number.

0	1	3	5						

The numbers above are called **odd** numbers.

Use your counting chart and starting at 0.   Write down every second number.

0	2	4	6						

The numbers above are called the **even** numbers. If you had a pile of toonies, you could count by two's to find out how much money you have.

Use your counting chart and start at 0. Count five and write down that number.

0	5	10							

If you had a pile of nickels or five dollar bills and wanted to know how much money you have, you would count be 5's.

Use your counting chart and starting at 0. Count ten and write down that number.

0	10	20							

If you had a pile of dimes or ten dollar bills and wanted to know how much money you have, you would count by 10's.

Exercise One

Count how much money you have. Check your work using the answer key at the end of the exercise.

Example:

5   10   15

How many nickels? ___3___

How much money do you have? ___15 cents___

a)

How many twonies do you have? _____

How much money do you have? _____ dollars

b)

How many dimes do you have? _____

How much money do you have? _____ cents

c)

How many nickels to you have? _____

How much money do you have? _____ cents

d)

How many dimes do you have? _____

How much money do you have? _____ cents

e)

How many nickels to you have? _____

How much money do you have? _____ cents

f)

How many twonies do you have? _____

How much money do you have? _____dollars

g)

How much money do you have? _____ cents

h)

How much money do you have? _____ dollars

i)

How much money do you have? _____ cents

Answers to Exercise One

a) 4 twonies, $8

b) 7 dimes, 70 cents

c) 9 nickels, 45 cents

d) 4 dimes, 40 cents

e) 10 nickels, 50 cents

f) 3 twonies, $26

g) 90 cents

h) $36

i) 70 cents

Topic F: Self-Test

Mark /16 **Aim 13/16**

A. Write the first 10 odd numbers starting with 1. **5 marks**

B. Write the first 10 even numbers starting at 2. **5 marks**

C. How much money do you have? **6 marks**
(2 marks each)

i)

How much money do you have? _____ cents

ii)

How much money do you have? _____ dollars

iii)

How much money do you have? _____ cents

Emotions Check

How are you feeling? Are your palms moist? How is your breathing?
Take control. Be the boss. If you are feeling anxious, practice your
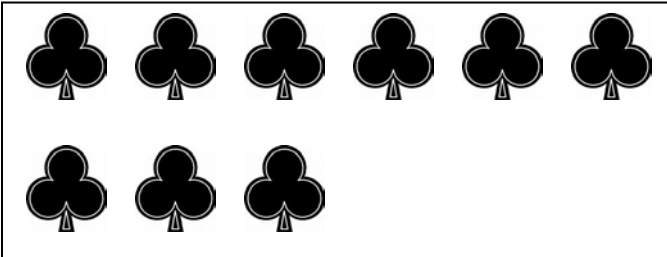breathing exercise.

Remember: breathe in slowly to the count of four, hold it for the count of
four and breathe out slowly to the count of four.

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.

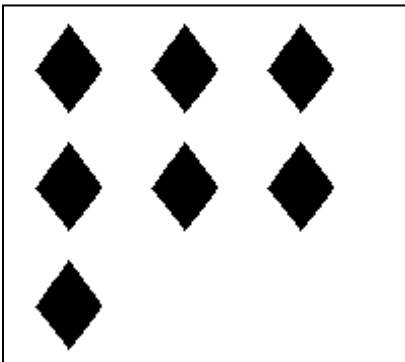**A.**   **Count the number of things in each picture. Write the number and word name.**
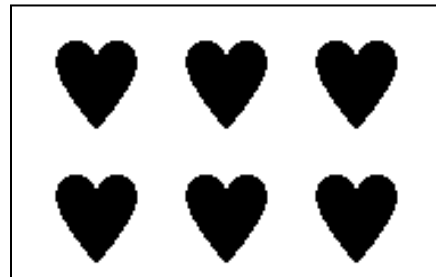
a)

Numeral:
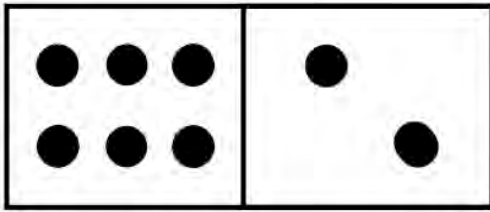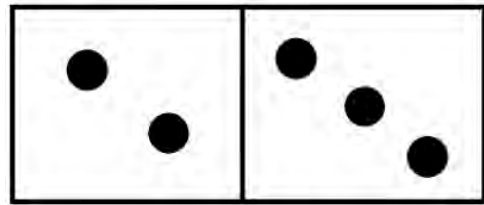
Word Name:

b)

Numeral:

Word Name:

c)

Numeral:

Word Name:

d)

Numeral:

Word Name:

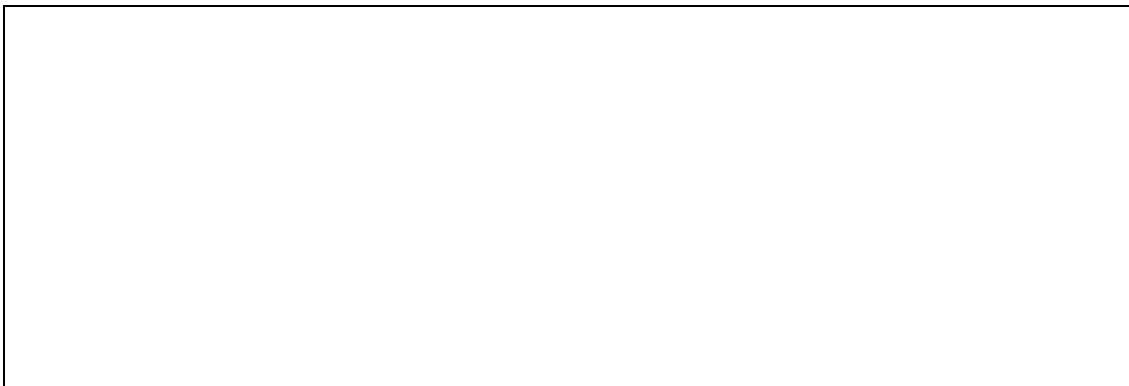e)

Numeral:

Word Name:

B.   Fill in the blanks to make each sentence true. Draw a picture for questions b and e.

a)   46 means ____ tens and ____ ones.

b)   25 means ____ tens and ____ ones.

Draw your picture below.

c)
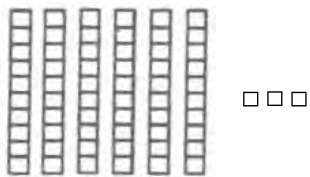
_____ means _____ tens and _____ ones

d)	138 = _____ hundreds, _____ tens, _____ones.

e)	231 = _____ hundreds, _____ tens, _____ ones.

Draw your picture below.

f)
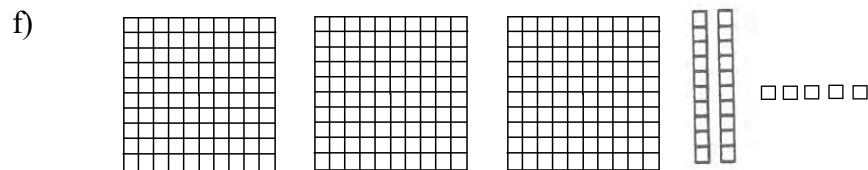
_____ hundreds   _____ tens   _____ ones = _____

**C.	Write the place value name (ones, tens, hundreds) for each underlined digit.**

a) 8<u>2</u>1	_____	b) 2<u>9</u>4	_____

c) 63<u>8</u>	_____	d) <u>4</u>17	_____

e) 3<u>4</u>6	_____	f) 57<u>3</u>	_____

D. **Underline the digit for the place value named.**

a) hundreds 164 b) tens 892

c) tens 250 d) hundreds 371

e) ones 485 f) ones 743

E. **Write the word names for the numbers.**

a) 73 _____ b) 14 _____

c) 5 _____ d) 39 _____

e) 52 _____ f) 496_____

g) 803_____ h) 640_____

F. **Write the numerals for these word names.**

a) forty-seven _____ b) nineteen _____

c) sixty-five _____ d) thirty-eight _____

e) twenty-four _____ f) five hundred thirty-five _____

g) three hundred sixty_____ h) two hundred four_____

G. **Arrange these numbers in order from smallest to largest.**

a) 258 32 23 282 345 534

_____

b)   155   27   635   208   452   335

_____

H.   Write <, >, or = in each blank as needed.

a) 37 _____ 52   b) 4 _____ 0

c) 349 _____ 394   d) 67 _____ 67

e) 86 _____ 68   f) 732 _____ 751

I.   Round each number to the nearest ten.

a) 37 ≈ _____   b) 344 ≈ _____   c) 68 ≈ _____

d) 25 ≈ _____   e) 51 ≈ _____   f) 876 ≈ _____

J.   How much money do you have?

a)

How much money do you have?   _____ cents

b)

How much money do you have? _____ dollars

c)

How much money do you have? _____ cents

K.   Word Problems

a) Hussein's fruit stand sold 114 watermelons, 287 honeydew melons and 345
    cantaloupes. Round each number to the nearest ten.

Melon	Number	Rounded Number
Watermelons		
Honeydew Melons		
Cantaloupes		

b) Yi-Min drove her delivery van 106 kilometres on Saturday, 187 kilometres on
    Sunday and 285 kilometres on Monday. Round each number to the nearest ten.

Kilometres	Number	Rounded Number
Saturday		
Sunday		
Monday		

Answers to Unit 1 Review

A.

a) 9, nine   b) 7, seven   c) 6, six   d) 8, eight   e) 5, five

B.

a) 4 tens, 6 ones   b) 2 tens, 5 ones   c) 63, 6 tens, 3 ones

d) 1 hundred, 3 tens, 8 ones   e) 2 hundreds, 3 tens, 1 one

f) 3 hundreds, 2 tens 5 ones, 325

C.

a) hundreds   b) tens   c) ones   d)   hundreds

e) tens   f) ones

D.

a) 1̲64   b) 89̲2   c) 2̲5̲0   d) 3̲71   e) 485̲   f) 743̲

E.

a) seventy-three b) fourteen   c) five   d) thirty-nine

e) fifty-two   f) four hundred ninety-six   g) six hundred forty

F.

a) 47   b) 19   c) 65   d) 38   e) 24   f) 535

g) 360   h) 204

G.

a) 23, 32, 258, 282, 345, 534   b) 27, 155, 208, 335, 452, 635

H.

a) <   b) >   c) <   d) =   e) >   f) <

I.

a) 40   b) 340   c) 70   d) 30   e) 50   f) 880

J.

a) 70 cents   b) 26 dollars   c) 90 cents

K. a)   b)

Melon	Number	Rounded Number
Watermelons	114	110
Honeydew Melons	287	290
Cantaloupes	345	350

Day	Kilometres	Rounded Number
Saturday	106	110
Sunday	187	190
Monday	285	290

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!