Alpha Omega Publications®

MATHEMATICS 501

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I. Part One

▲ Our number system is based on ten **digits**.

0	1	2	3	4	5	6	7	8	9

Digits are combined to form a number that has a value.
The number of digits and the arrangement of digits gives the number its value.

1.1 Arrange these numbers in number order.

269   5,296   42   4   25,092   620,592

a. _____ b. _____ c. _____ d. _____ e. _____ f. _____

Numbers with more than one digit are multi-digit numbers.
The place value chart shows the number value for multi-digit numbers.

—— thousands ——   —— units ——

hundreds	tens	ones	hundreds	tens	ones
4	6	5 ,	2	3	7

465,237 is read, "four hundred sixty-five thousand,
two hundred thirty-seven."

We use a hyphen to join the tens' numbers and ones' numbers.
We write a comma between the thousands' place and hundreds' place.

1.2 The main headings of the number chart are thousands and units.
What are the places under the main headings for thousands and units?
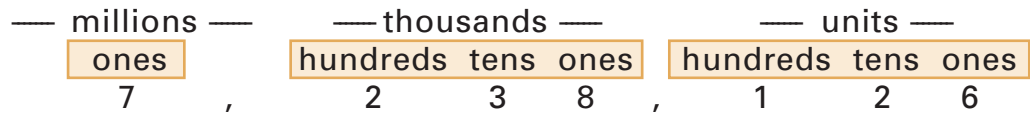
a. _____   b. _____   c. _____

1.3 Write the number words.

a.   3,664   _____

b.   15,152   _____

c.   346,841   _____

_____

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■ The next main heading on the place value chart is millions.

— millions —		— thousands —			— units —		
ones		hundreds	tens	ones	hundreds	tens	ones
7	,	2	3	8	1	2	6

7,238,126 is read, "seven million, two hundred thirty-eight thousand,
one hundred twenty-six."

We use a hyphen to join the tens' numbers and ones' numbers.
We write a comma between the thousands' place and hundreds' place.
We write a comma between the millions' place and thousands' place.

1.4 Write the number word.

    a. 6,281,534 _____

                _____

    b. 8,693,271 _____

                _____

▲ Zero is a special digit. Zero is a place holder.

It tells us that there is no value in that place.
When there is a zero in a number, we do not read the place.

1,056,021 is read, "one million, fifty-six thousand, twenty-one."
There is no number to read in the hundred thousands' place.
There is no number to read in the hundreds' place.

1.5 Write the number word.

    a. 5,036,204 _____

    b. 7,603,250 _____

                _____

1.6 Match.

    a. _____   45,632   1. four million, four hundred thirteen thousand, sixty-two

    b. _____   401,532   2. five million, sixty-three thousand, two hundred thirty-one

    c. _____ 5,463,231   3. forty-five thousand, six hundred thirty-two

    d. _____ 5,063,231   4. five million, four hundred sixty-three thousand,
                                             two hundred thirty-one

    e. _____ 4,413,062   5. four hundred one thousand, five hundred thirty-two

Addition facts are all of the one-digit numbers with their sums.

Subtraction facts are related to addition facts. Together they make a **family of facts**.

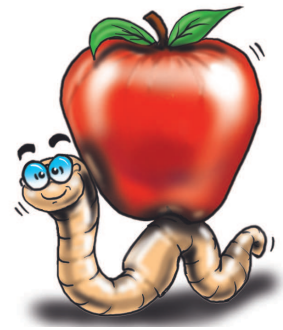1.7 Write the family of facts.

4, 7, 11   6, 8, 14

____ + ____ = ____   ____ + ____ = ____   ____ + ____ = ____   ____ + ____ = ____

____ − ____ = ____   ____ − ____ = ____   ____ − ____ = ____   ____ − ____ = ____

Each part of a mathematics operation has a name.

1.8 Find the sum and the difference.

```
  252  addend              485  minuend
+ 362  addend            − 290  subtrahend
_____  sum               _____  difference
```

When we add and subtract, we may need to carry or borrow.

1.9 Add or subtract.

a.
```
    63          358          645          132
    47          296          237          306
+   95       +  307       +  865       +  941
```

b.
```
  7,486       45,327          963        6,362
+ 3,629     + 58,649        − 285      − 4,208
```

c.
```
  9,003        6,200       54,638       87,000
− 2,059      − 4,318     − 29,386     − 39,054
```

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Digits have a value because of their place in a number.

We write how many. We write the value.

millions		thousands			units		
ones	hundreds	tens	ones	hundreds	tens	ones

$$4{,}632{,}954 = \quad 4 \quad + \quad 6 \quad + \quad 3 \quad + \quad 2 \quad + \quad 9 \quad + \quad 5 \quad + \quad 4$$
$$= \quad 4{,}000{,}000 \quad + \quad 600{,}000 \quad + \quad 30{,}000 \quad + \quad 2{,}000 \quad + \quad 900 \quad + \quad 50 \quad + \quad 4$$

1.10 Write how many. Write the value.

a. 5,430,781 =_____ + _____ + _____ + _____ + _____ + _____ + _____

   =_____ + _____ + _____ + _____ + _____ + _____ + _____

b. 9,080,542 =_____ + _____ + _____ + _____ + _____ + _____ + _____

   =_____ + _____ + _____ + _____ + _____ + _____ + _____

1.11 Write the value of 8 in each number.

563,842   1,687   38,015   8,942,336   983,542   5,836,291

_____   _____   _____   _____   _____   _____

1.12 Write a number that has a …

3 in tens' place, 4 in hundreds' place,
5 in thousands' place, and 7 in ones' place.   _____

9 in ten thousands' place, 6 in ones' place, 5 in thousands'
place, 3 in hundreds' place, and 2 in tens' place.   _____

7 in millions' place, 2 in hundreds' place, 0 in thousands'
place, 5 in hundred thousands' place, 4 in ones' place,
8 in ten thousands' place, and 6 in tens' place.   _____

1.13 Arrange these numbers in number order.

3,654,382   3,543,328   3,564,382   3,645,882   3,645,282

_____   _____   _____   _____   _____

1.14 Add 9 to each number.

8 _____   6 _____   4 _____   7 _____   5 _____   3 _____

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