I. Part One

Objectives
To read and write numbers to millions' place
To learn about factors, multiples, cardinal, even, and prime numbers
To learn the names of whole number operations

The number system that we use is a base ten system. There are ten **digits**.

0 1 2 3 4 5 6 7 8 9

We use the digits to count to ten and then we start over.
If we understand the pattern, there is no limit to how far we can count ...

— millions —			— thousands —			— units —		
hundreds	tens	ones	hundreds	tens	ones	hundreds	tens	ones

The place value chart shows three main headings for numbers.
Each main heading contains three digits separated by a comma.
As numbers grow larger, the commas become more important.

1.1 Write commas in the numbers (if necessary).
Write the name of the largest main heading for each number.

a. 863549 _____ 235871629 _____ 21471 _____

b. 506 _____ 6729108 _____ 93239658 _____

c. 571324 _____ 351 _____ 2804572 _____

Numbers are read in groups of three.

We always read the group of three in the same way.
Then, we say the name of the main heading,
"five hundred sixty-two million,
three hundred forty-seven thousand,
two hundred ninety-eight."
Units do not require us to say a main heading.

562,347,298

562,000,000
347,000
298

1.2 Write the part of the number that is underlined in number words.

a. 236,452 _____ 495,832,561 _____

b. 83,018,262 _____ 276,194,058 _____

c. 781,945,639 _____ 1,362,846 _____

Zero is used as a place holder. It has no value.

1.3 Write the numbers in digits.

a. five hundred twenty-six million, two hundred forty-eight thousand, seven hundred ninety-five _____

b. eighty-one million, sixty-one thousand, two hundred thirty-two _____

Problems in multiplication of fractions are solved by multiplying the numerators together and the denominators together. Answers should be simplified. Divide the numerator and denominator (6, 24)by the (GCF) greatest common factor (6).

$\frac{2}{3} \times \frac{3}{8} = \frac{6}{24} = \frac{1}{4}$

1.5 Multiply. Simplify.

a. $\frac{5}{8} \times \frac{2}{3} =$ $\frac{4}{9} \times \frac{1}{6} =$ $\frac{2}{5} \times \frac{3}{4} =$ $\frac{2}{3} \times \frac{1}{7} =$ $\frac{1}{2} \times \frac{3}{8} =$

b. $\frac{2}{9} \times \frac{2}{3} =$ $\frac{1}{8} \times \frac{4}{5} =$ $\frac{7}{9} \times \frac{1}{2} =$ $\frac{5}{6} \times \frac{2}{3} =$ $\frac{3}{4} \times \frac{3}{4} =$

c. $\frac{4}{5} \times \frac{1}{2} =$ $\frac{5}{12} \times \frac{2}{3} =$ $\frac{3}{8} \times \frac{5}{6} =$ $\frac{7}{10} \times \frac{1}{4} =$ $\frac{3}{5} \times \frac{1}{6} =$

Suppose we have $\frac{2}{5}$ of $\frac{1}{3}$ of a box.
How much of the whole box is that?
Substitute the multiplication sign for the word "of."
$\frac{2}{5}$ of $\frac{1}{3}$ of a box is $\frac{2}{15}$ of the whole box.

$\frac{2}{5} \times \frac{1}{3} = \frac{2}{15}$

1.6 Multiply. Simplify.

a. $\frac{1}{2}$ of $\frac{1}{3} =$ $\frac{2}{3}$ of $\frac{1}{5} =$ $\frac{4}{5}$ of $\frac{2}{3} =$ $\frac{3}{8}$ of $\frac{3}{4} =$ $\frac{1}{2}$ of $\frac{1}{4} =$

b. $\frac{3}{4}$ of $\frac{3}{5} =$ $\frac{1}{5}$ of $\frac{3}{4} =$ $\frac{7}{8}$ of $\frac{1}{2} =$ $\frac{5}{6}$ of $\frac{1}{3} =$ $\frac{1}{3}$ of $\frac{1}{2} =$

c. $\frac{5}{8}$ of $\frac{1}{2} =$ $\frac{4}{9}$ of $\frac{2}{3} =$ $\frac{1}{4}$ of $\frac{4}{7} =$ $\frac{2}{5}$ of $\frac{1}{8} =$ $\frac{3}{4}$ of $\frac{2}{3} =$

Every whole number has an understood denominator of 1.

$3 = \frac{3}{1}$

1.7 Write each whole number as a fraction with a denominator of 1.

5 _____ 13 _____ 9 _____ 42 _____ 28 _____ 15 _____ 36 _____

Fractions and whole numbers can be multiplied.
Change the whole number to a fraction with a denominator of 1. Multiply. Simplify.

$\frac{3}{4} \times 5 = \frac{3}{4} \times \frac{5}{1} = \frac{15}{4} = 3\frac{3}{4}$

1.8 Multiply. Simplify.

a. $\frac{3}{4} \times 14 =$ $16 \times \frac{5}{8} =$ $\frac{5}{9} \times 12 =$ $6 \times \frac{1}{4} =$ $\frac{2}{3} \times 7 =$

b. $\frac{2}{5} \times 10 =$ $25 \times \frac{1}{7} =$ $\frac{4}{5} \times 12 =$ $8 \times \frac{3}{5} =$ $\frac{3}{8} \times 12 =$

Suppose we have $\frac{3}{4}$ of 8 apples.
How many apples is that?
Substitute the multiplication sign for the word "of."
$\frac{3}{4}$ of 8 apples is 6 apples.

$\frac{3}{4} \times \frac{8}{1} = \frac{24}{4} = 6$ apples

Self Test 3

3.01 The store had the pencils grouped in sets of 2 red pencils and 5 black pencils. If Lisa bought 25 black pencils, how many red pencils would she receive? (this question, 1 point)

_____

3.02 A bag of 3 dozen cookies showed a ratio of the flavors chocolate, sugar, and ginger as 3:2:1. (each answer, 1 point)

a. The total number of cookies *in the ratio* is _____

b. Write the ratio and simplify.

chocolate to total in ratio _____ sugar to total in ratio _____ ginger to total in ratio _____

c. Solve for ...
the amount of chocolate cookies. _____ = x (chocolate)

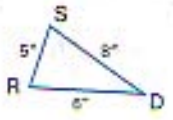
d. Solve for ...
the amount of sugar cookies. _____ = x (sugar)

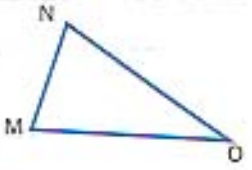
e. Solve for ...
the amount of ginger cookies. _____ = x (ginger)

f. Do your figures add up to 3 dozen cookies?

_____ _____

3.03 ΔRSD and ΔMNO are similar.
The ratio of ΔRSD to ΔMNO is 4:5.
(each answer, 1 point)
Find the measurements of ...





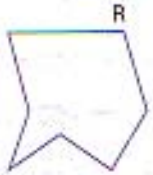
a. $\overline{MN}$ _____ b. $\overline{NO}$ _____ c. $\overline{MO}$ _____

3.04 There are three ways to move congruent shapes.
Write *rotation (ro), translation (tr),* or *reflection (re)* on the lines. Draw congruent figures.
(each answer, 1 point)

a. Suppose you could slide the figure. _____ Draw it in box A.

b. Suppose you could hold the figure up to a mirror. _____ Draw it in box B.

c. Suppose you could draw the figure so that point R is on the bottom left side. _____ Draw it in box C.



A

B

C

3.05 Using a ruler, draw a rhombus with diagonals equal to 1 in. and 2 in.
(this question, 2 points)

Write the measure of the sides. _____

MATHEMATICS 610: LIFEPAC TEST

Name _____

Date _____

Score _____

80/100

1. Solve. Simplify answers. (each answer, 2 points)

a. $\frac{2}{5} + \frac{3}{10} + \frac{1}{4} =$ _____ $2\frac{2}{5} \times \frac{3}{4} =$ $5\frac{5}{8} \div 2\frac{1}{4} =$ $8.5 - 3.76$ _____

b. $37\% \times 5$ _____ 4 gal. 2 qt. + 3 gal. 3 qt. _____ 6 lb. 3 oz. − 2 lb. 8 oz. _____ $5\overline{)1 \text{ ft. } 3 \text{ in.}}$

2. Use "shortcut" to solve. (this question, 6 points)

a. $700 \times 28 =$ _____

b. $5{,}000 \times 87 =$ _____

c. $46{,}000 \times 63 =$ _____

3. Think the answer. Write the answer. (each answer, 1 point)

$\frac{1}{2}$ of 1,800 = _____ $\frac{2}{3}$ of 12,000 = _____ $\frac{3}{8}$ of 1,600 = _____

4. Solve. Round to the ... (this question, 8 points)

a. nearest cent. b. nearest dollar.

$3\overline{)\$5.00}$ $6\overline{)\$5.20}$ $8\overline{)\$9.52}$ $5\overline{)\$69.90}$

5. Solve. (each answer, 1 point)

a. 15% of 40 days is _____ days.

b. Six inches is $\frac{2}{3}$ of how many inches? _____

c. Nine bananas is $\frac{3}{4}$ of how many bananas? _____