

I. NUMBER CONCEPTS

OBJECTIVES

When you have completed this section, you should be able to:

1. Identify place values of numbers.
2. Work with the order of numbers.
3. Round numbers to the nearest ten, hundred, and thousand.

Number concepts that are important for understanding addition and subtraction are place value, number order, and rounding numbers. Place value involves powers of ten, and number order involves the concepts of greater than and less than. Rounding numbers is useful in estimating sums and differences.

PLACE VALUE

The number 782 means 7 hundreds plus 8 tens plus 2 ones. Because hundreds, tens, and ones are powers of ten, we call our number system base 10. Each of the powers of ten is a place and has a place value equal to its power of ten.

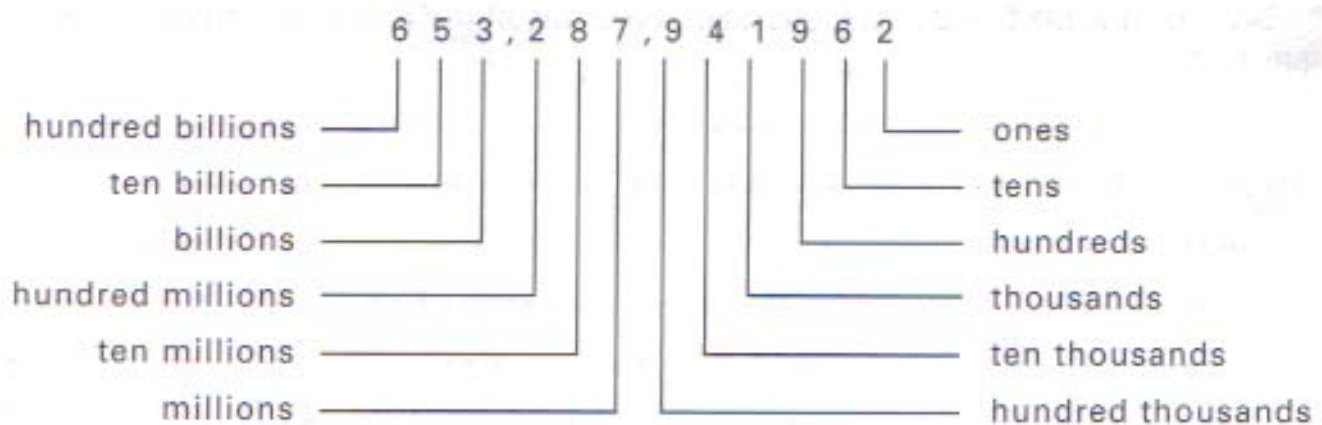
DEFINITIONS

Base 10: our number system, in which place values are powers of ten.

Place: the position of a number.

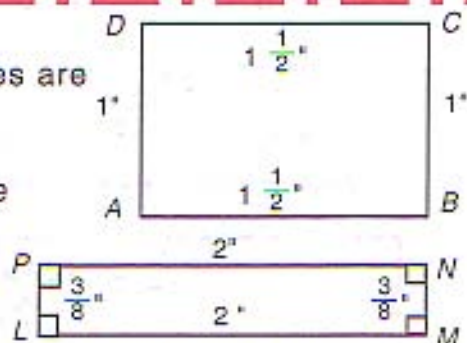
Place Value: the power of ten that names a particular place.

Place value is extended indefinitely to the left; however, we soon run out of names for the larger numbers. You should learn the names of the place values up to a hundred billion.



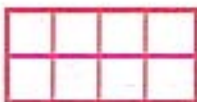
RECTANGLES

A rectangle is like a square in that all the angles are right angles. The difference is in the sides. In a square, all sides are the same length; but in a rectangle, only the sets of opposite sides must be the same length. We usually call the longer sides the length and the shorter sides the width.



***** Find the perimeter, area, and sum of the angles for these rectangles. Measure to nearest $\frac{1}{8}$ inch and millimeter.**

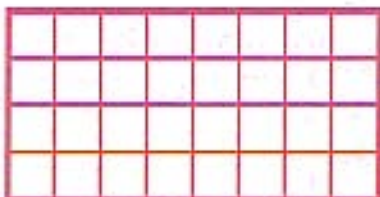
3.15



- a. $P =$ _____ in.
 b. $P =$ _____ cm
 c. $A =$ _____ sq. units

Sum of \angle 's = _____

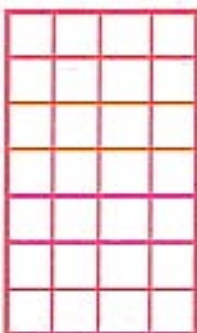
3.16



- a. $P =$ _____ in.
 b. $P =$ _____ cm
 c. $A =$ _____ sq. units

Sum of \angle 's = _____

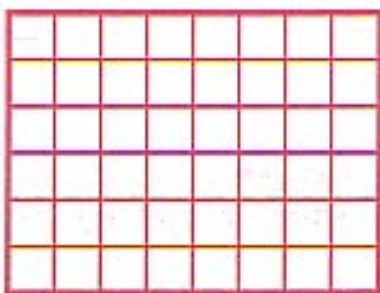
3.17



- a. $P =$ _____ in.
 b. $P =$ _____ cm
 c. $A =$ _____ sq. units

Sum of \angle 's = _____

3.18



- a. $P =$ _____ in.
 b. $P =$ _____ cm
 c. $A =$ _____ sq. units

Sum of \angle 's = _____

3.19



- a. $P =$ _____ in.
 b. $P =$ _____ cm
 c. $A =$ _____ sq. units

Sum of \angle 's = _____

SELF TEST 1

Write a definition for the following words (each answer, 2 points).

1.01 common fraction _____

1.02 numerator _____

1.03 denominator _____

1.04 mixed number _____

1.05 proper fraction _____

1.06 improper fraction _____

1.07 invert _____

Perform the following multiplications and divisions. Reduce answers to lowest terms. Write any answers that are improper fractions as whole numbers or mixed numbers (each answer, 3 points).

1.08 $3\frac{1}{6} \times \frac{1}{7} =$ _____

1.09 $1\frac{1}{3} \times 11\frac{4}{7} =$ _____

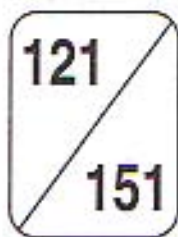
1.010 $\frac{2}{3} \times \frac{3}{4} =$ _____

1.011 $2\frac{1}{8} \times 3\frac{1}{2} =$ _____

1.012 $\frac{2}{3} \times \frac{3}{5} =$ _____

1.013 $3\frac{1}{4} \times 1\frac{1}{3} =$ _____

MATHEMATICS 710: LIFEPAK TEST



Name _____

Date _____

Score _____

Play "fraction baseball." Perform all four operations using the fractions indicated. Reduce common fractions to lowest terms; round decimal fractions to four decimal places (each answer, 3 points).

- | | Single (+) | Double (-) | Triple (x) | Home Run (÷) |
|----|-------------------------|------------|------------|--------------|
| | Fraction: $\frac{1}{3}$ | | | |
| 1. | $\frac{3}{8}$ | | | |
| | a. _____ | b. _____ | c. _____ | d. _____ |
| 2. | $1\frac{1}{2}$ | | | |
| | a. _____ | b. _____ | c. _____ | d. _____ |
| | Decimal Fraction: 0.52 | | | |
| 3. | 1.76 | | | |
| | a. _____ | b. _____ | c. _____ | d. _____ |
| 4. | 0.18 | | | |
| | a. _____ | b. _____ | c. _____ | d. _____ |

Consider the following sets.

$$A = \{1, 2, 3, 4\} \quad C = \{2, 4, 6\}$$

$$B = \{5, 6, 7, 8\} \quad D = \{1, 3, 5\}$$

Use the symbols \in and \notin to make the following sentences true (each answer, 2 points).

5. 2 _____ A

7. 2 _____ C

6. 2 _____ B

8. 2 _____ D

Write the elements of set B in base 2 (each answer, 2 points).

9. $5 =$ _____

11. $7 =$ _____

10. $6 =$ _____

12. $8 =$ _____