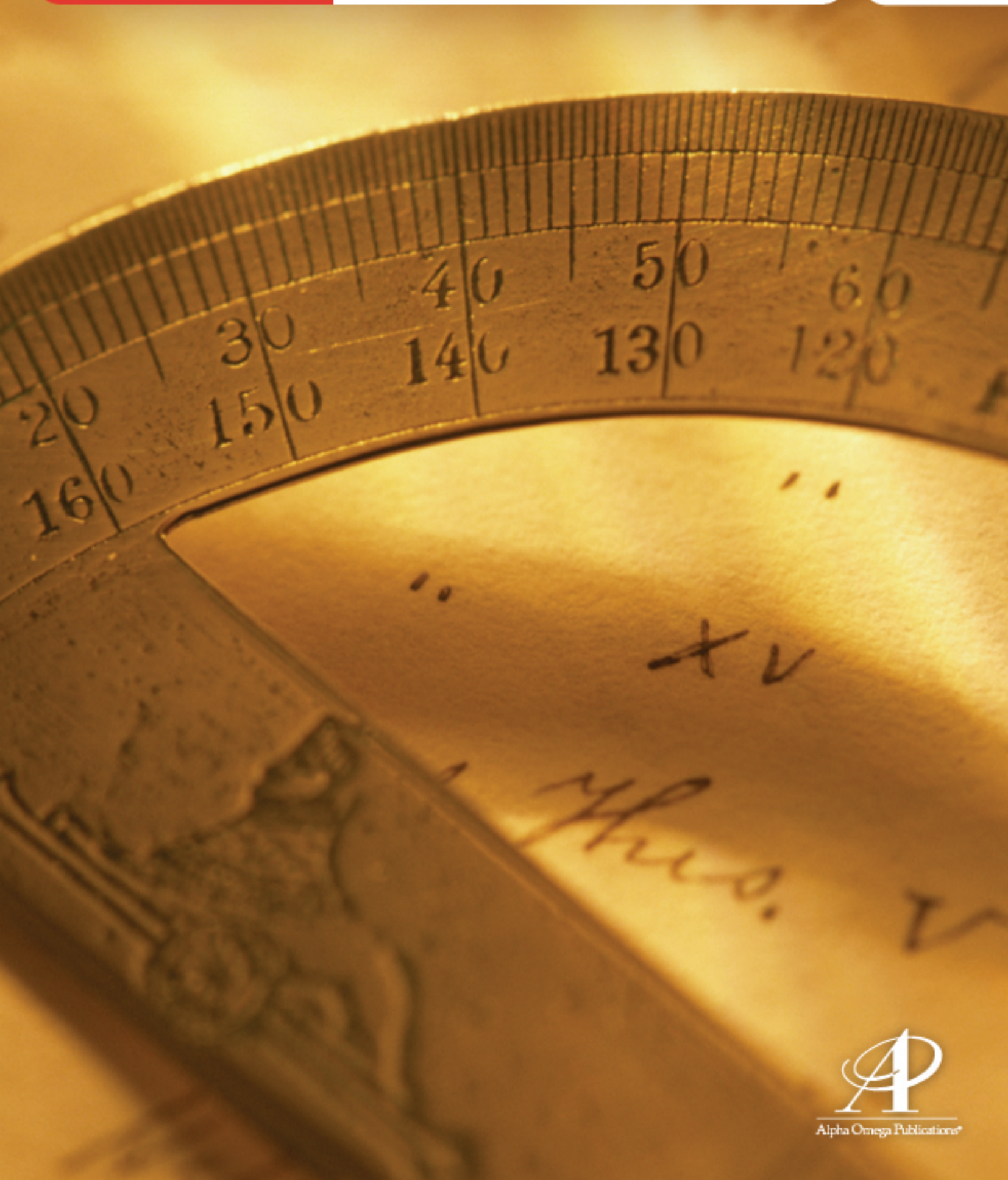
LIFEPAC® Math



Alpha Omega Publications®

MATHEMATICS 510

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I. Part One

Objectives
To show numbers of equal value To learn about probability and ratios To review number words

There are ten digits. Their place in the number gives them their value.

1.1 Write the ten digits. ____ ____ ____ ____ ____ ____ ____ ____ ____ ____

One digit has no value. It is a place holder. What is the digit? _____

Given any number of digits (3 9 4 5 0), we can ...

write the *largest* number by arranging
the digits in order from largest to smallest. 95,430

write the *smallest* number arranging
the digits in order from smallest to largest. (0 is not written) 3,459

1.2 Write the largest and smallest number for each set of digits.

a. 3 2 8 5 7 1 6 _____ _____

b. 4 1 0 3 2 3 5 7 _____ _____

c. 8 6 3 2 0 2 1 _____ _____

The same number may be expressed in several ways.

$(6 + 8) \div 2 = 7$ $\frac{21}{3} = 7$ $18 - 11 = 7$ $(31 - 3) \div 4 = 7$

1.3 Three of each set of four problems expresses the same number.
Write the number on the line. Circle the problem that does not belong.

a.	_____	$47 - 38$	$\frac{54}{9}$	$36 \div (18 - 14)$	$3 \times 3 \times 1$
b.	_____	$(8 \times 4) - 16$	$2 \times 2 \times 2 \times 2$	$96 \div 6$	$(46 - 18)$
c.	_____	$(72 - 23) - 15$	$3 + (8 \times 4)$	$280 \div 8$	$\frac{210}{6}$
d.	_____	$(56 + 13) \div 3$	$105 - (52 - 14)$	$8,006 - 7,983$	$(18 - 0) + 5$

Numbers grouped together may represent a pattern.

1.4 Write a family of facts for...

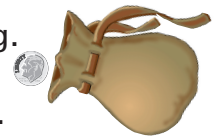
9, 5, 14 7, 8, 56

_____ _____ _____ _____

_____ _____ _____ _____

Probability tells us the possibility that something *will* or *will not* happen.

There are 10 coins in a bag: 2 quarters, 4 dimes, 3 nickels, 1 penny.
We shake the bag and 1 coin falls out.
We can state the probability of which coin has fallen out of the bag.



1.5 Write the ratio of each coin to the total number of coins in the bag.

a. quarter ____:____ dime ____:____ nickel ____:____ penny ____:____

We can say the probability of the coin being a...

b. quarter is _____ out of _____. dime is _____ out of _____.

nickel is _____ out of _____. penny is _____ out of _____.

Suppose the ratio of coins stays the same, but now the bag contains 30 coins.
We shake the bag and 1 coin falls out.
We can use equivalent fractions,
to state the probability of which coin has fallen out.

1.6 Write equivalent fractions for each coin.

a quarter $\frac{\quad}{10} = \frac{\quad}{30}$ dime $\frac{\quad}{10} = \frac{\quad}{30}$ nickel $\frac{\quad}{10} = \frac{\quad}{30}$ penny $\frac{\quad}{10} = \frac{\quad}{30}$

For a bag of 30 coins, the probability of the coin being a ...

b. quarter is _____ out of _____. dime is _____ out of _____.

nickel is _____ out of _____. penny is _____ out of _____.

The ratio can be expressed in percent. 8 out of 100 is 8%.
Percent is "how many out of 100." 54 out of 100 is 54%.

1.7 Write equivalent fractions.

a quarter $\frac{\quad}{10} = \frac{\quad}{100}$ dime $\frac{\quad}{10} = \frac{\quad}{100}$ nickel $\frac{\quad}{10} = \frac{\quad}{100}$ penny $\frac{\quad}{10} = \frac{\quad}{100}$

Based on 100 coins, the probability of the coin being a ...

b. quarter is _____ out of _____. dime is _____ out of _____.

nickel is _____ out of _____. penny is _____ out of _____.

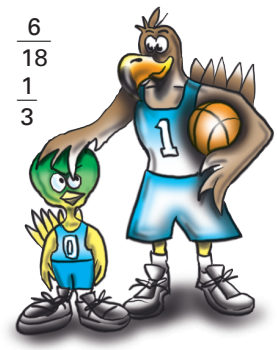
Show the probability of each coin by expressing it in per cent.

c. quarter _____ dime _____ nickel_____ penny_____

Ratios can be reduced from large numbers to small numbers.

Six out of eighteen balls were basketballs. 6 out of 18 = $\frac{6}{18}$

One-third of the balls were basketballs. $\frac{6}{18}$ = $\frac{1}{3}$



1.8 Write the ratio as fractions reduced to lowest terms.

a Fifteen of the twenty-five apples were red. _____

b. Nine out of eighteen people wore blue hats. _____

c. Sixteen of the forty-eight trees were maples. _____

Ratios can be compared through cross multiplication.

Four of five animals at the pet show were dogs. $\frac{4}{5}$ (>, <) $\frac{13}{15}$

Thirteen out of fifteen animals at the kennel were dogs.

The largest ratio of dogs to animals was at the kennel. 4 x 15 = 60 < 13 x 5 = 65

1.9 Write the ratios as fractions and compare.

a. Jodie had nine out of eleven answers correct.
Betsy had fourteen out of seventeen correct.
Who had the higher ratio of correct answers? _____

b. Eighteen of twenty-five pencils were black.
Fifteen of twenty-two pens were black.
Was there a higher ratio of black pencils or pens? _____

1.10 Chad and Jean sent a questionnaire to the youth groups in their area. They asked how many members of each group had attended camp that summer. The group with the largest attendance would receive an award.
The questionnaire asked ...
1) the number of people who attended camp 2) the number in each group.
The replies they received were ...

Group I - 16, 20	Group II - 12, 18	Group III - 15, 24
Group IV - 12, 21	Group V - 25, 30	Group VI - 21, 28

a. Express as a ratio the number of people who attended camp in each group compared to the number of people in the group.

G-I _____ G-II _____ G-III _____ G-IV _____ G-V _____ G-VI _____

b. Reduce each ratio to lowest terms.

G-I _____ G-II _____ G-III _____ G-IV _____ G-V _____ G-VI _____

c. Find the largest ratio. Compare fractions. Begin by comparing Group I and II. Keep the larger fraction and compare to Group III. Continue keeping the larger fraction until all groups have been compared.
The group that should receive the award is Group _____.

1.11 Answer questions about whole numbers.

a. Whole numbers are read in groups of (1, 2, 3) numbers.

b. A _____ separates millions from thousands, thousands from units.

c. A _____ joins the ones' place and tens' place.

d. Write in number words. Spell correctly.

500,010,000 _____

450,602 _____

e. Write numbers in digits.

five million, seven hundred eighty-two _____

six hundred million, four hundred thousand, twenty-two _____

f. Every whole number has an understood decimal point.
Write a decimal point in each of these numbers. 32 930 7

1.12 Answer questions about fractions.

a. The line separating the numerator and denominator is the _____.

b. Select the word for the definition. proper, improper, mixed number

the numerator is larger than the denominator _____

the denominator is larger than numerator _____

a combination of whole number and fraction _____

c. Write in number words. Spell correctly.

$\frac{5}{8}$ _____ $\frac{9}{5}$ _____ $\frac{15}{16}$ _____

$7\frac{2}{3}$ _____ $4\frac{7}{12}$ _____

d. Write number words in digits.

eight-ninths _____ three-fifths _____ fourteen-sevenths _____

nine and one-third _____ eighteen and five-ninths _____