Using The Quick Notes Learning System

Step # 1
The Pretest

Begin with a 49-question pretest. This pretest covers material required by many states to show an understanding of high school mathematics.

Complete solutions to the pretest have been provided in Appendix 2. They may be used to score the pretest and see how to do questions answered incorrectly.

Step # 2
Using Learning Units

Need help? **Quick Notes** has 49 easy to follow learning units. Pretest questions are numbered to match learning unit numbers. If your answer to pretest question 5 to simplify $24 + (6 - 3)(4) - 5^2$ was incorrect, study **Learning Unit 5** on **The Order of Operations**.

Quick's one-page learning units explain math concepts with an easy to follow outline. By limiting learning units to one page, **Quick Notes** makes learning difficult concepts easier.

Pretest

1) Which number is six thousand two hundred nine?

A) 6,290 B) 6,209

C) 6,909 D) 6,299 Answer _____

2) Round 5,345 to the nearest hundred

3A) $36 + 472 + 8 =$

3B) $502 - 58 =$

4A) $(206)(35) =$

4B) $56\overline{)61{,}096}$

5) Simplify $24 + (6 - 3)(4) - 5^2$

6) Which of the following is not a prime number?

A) 7 B) 11 C) 13 D) 15 Answer _____

7) Which of the following is less than $\frac{3}{4}$?

A) $\frac{3}{5}$ B) $\frac{4}{5}$ C) $\frac{12}{16}$ D) $\frac{13}{16}$ Answer _____

Unit 5 The Order of Operations

1. Mathematical expressions may involve one or more operations.
   - A. Six important math operations are addition, subtraction, multiplication, division, exponents, and roots.
   - B. These are math expressions with one operation.

$4 + 2$ | $6 - 3$ | $(4)(2)$ | $9 \div 3$ | 2^2 | $\sqrt{9}$

   - C. Order of operations is important when a math expression has more than one operation. When given a choice of two math operations to perform, the **higher order operation is done first**. **Equal order operations are done left to right.**

The Order of Operations			
1st	Operations within parenthesis	3rd	Multiplication and division **(middle order)**
2nd	Exponents and roots **(highest order)**	4th	Addition and subtraction **(lowest order)**

2. Solving mathematical expressions

$4 + 5 \rightarrow 9$

$7 - (8 - 3) \rightarrow 7 - 5 \rightarrow 2$

$5 + 7 \times 2 \rightarrow 5 + 14 \rightarrow 19$

$15 \div (5 - 2) + 3^2 \rightarrow 15 \div 3 + 3^2 \rightarrow 15 \div 3 + 9 \rightarrow 5 + 9 \rightarrow 14$

Each learning unit is followed by **practice problems**. Space has been provided to determine their solutions. Learning units and practice problems are on facing pages. Students need only look to their left for help with difficult problems.

Score the practice problems using answers provided in Appendix 4.

Unit 5 Practice Problems

Simplify the following expressions.

1) $8 + 3 - 4$	3) $8 - (6 - 4) + 2$	5) $24 \div (6-2)4^2$	6) $(9-5) + 16 \div 4$
2) $12 - (6 - 4)$	4) $16 \div 4 \times 2$		

Unit 5 answers are on page 237.
Unit 5 additional practice problems are on page 160.

Students not doing well (more than a few wrong) should review the learning unit and then do the **additional practice problems** located in Appendix 1. Students doing well should save these additional problems for possible use at a later time.

Step # 3
Reviewing Key Concepts

Learning units covering similar material have been grouped into 7 parts. Each part ends with a review of key concepts and a quiz (except for part 6, which does not have a review).

Part 1 Review of Whole Numbers

Place value names

Hundreds	Tens	Units	Hundreds	Tens	Units	Hundreds	Tens	Units
Millions			Thousands			Ones		

Writing numbers

The number four million two hundred sixty-five thousand four hundred one is written as follows: 4,265,401

Writing whole numbers with words

Rules for writing whole numbers:
1. Do not use the word "and"
2. Use a hyphen for numbers 21 to 99

The number 83,206,812 would be written as follows:

eighty-three million two hundred six thousand eight hundred twelve

Symbols used to compare numbers

Relationship	Symbol	Example
is greater than	$>$	$8 > 6$
is less than	$<$	$6 < 8$
is equal to	$=$	$7 = 4 + 3$
is not equal to	$\neq$	$1 + 6 \neq 8$
is approximately equal to	$\approx$	$90 \approx 88$

Rounding

1. Determine the number of places desired in the answer.
2. Round up if the digit to the right is greater than or equal to 5.
3. Do not round up if the digit to the right is less than 5.
4. Replace the remaining digits with zeros.

Rounding 478 to the nearest ten gives 480.

$480 \approx 478$

Rounding 7,648 to the nearest hundred gives 7,600.

$7,600 \approx 7,648$

Step # 4
Measuring Progress with a Quiz

Score the quiz and learn how to do problems answered incorrectly using the quiz solutions provided in Appendix 3. If not completed earlier, the additional practice problems related to this quiz may be done at this time or they may be saved for later use.

Step # 5
Tying Everything Together with a Cumulative Problem Review

Before going on to the next part of **Quick Notes**, make sure your skills are up to par with a **cumulative problem review**. Like the pretest, cumulative review problems are numbered to match the learning unit number that contains their explanation. If you miss question 5, see how to do it correctly by studying Learning Unit 5. Answers to cumulative review problems are provided in Appendix 4.

Step # 6
The Posttest

Taking the posttest is the final step of the Quick Notes Learning System. Use the posttest solutions provided in Appendix 2 to learn how to do problems answered incorrectly.

Quiz 2 Fractions

1) Describe a fraction in the space provided.

2) Write a fraction describing one player on a ten-player basketball team.

Answer _____

3) Write a fraction describing the five starting players on a ten-player basketball team. _____

4) Write each fraction as an equivalent fraction with the given denominator.

A) $\frac{1}{3} = \frac{}{15}$ B) $\frac{3}{5} = \frac{}{100}$

5) Write 8/2 as a whole number.

6) Write $\frac{17}{5}$ as a mixed number.

Parts 1 - 5 Cumulative Problem Review

1) Write the number four hundred thirty-five thousand. _____

2) Round your problem 1 answer to the nearest ten thousand. _____

3) 8,154 + 1,846

4) 3,654/42 =

5) $2(3)^2 + 4(6-2) \div 2 =$

6) Which is a composite number?

A) 5 B) 7 C) 9 D) 11 E) 13

Answer _____

7) Write your share of a pizza you are sharing with 3 friends.

Posttest

Directions: Solve the following problems. Please note posttest problems are numbered to match learning unit numbers. Complete solutions are provided beginning on page 211.

1) Which number is fifteen thousand four hundred sixty?

A) 15046 B) 15406

C) 15460 D) 14064 Answer _____

2) Round 68,559 to the nearest thousand.

3A) 96 + 673 + 9 =

3B) 704 - 38 =

4A) 86 x 406 =

4B) $47\overline{)51{,}653}$

5) Simplify $4 + 2(12 - 4) \div 2^2$

6) What are the prime factors of 30?

Introducing Fred Look Ahead and Lulu Review

I'm Fred Look Ahead.
Use me as a reminder to look over the main points of a learning unit before reading it in detail. Looking around first will make learning easier.

I'm Lulu Review.
I'm here to remind you to review once in a while. So jump on board, and we will review together.

Be sure to look at the Table of Contents on the next page. You need to know where you are going because Lulu is flying all over this book and you might crash into her.