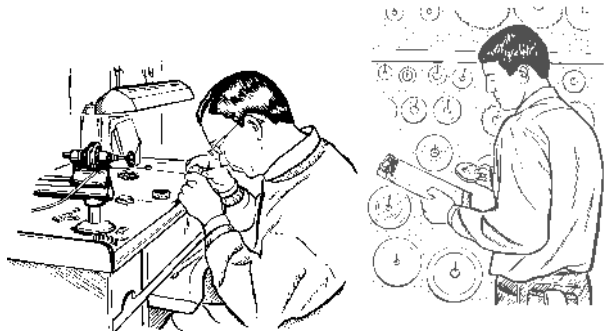
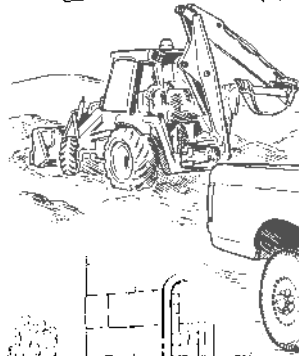
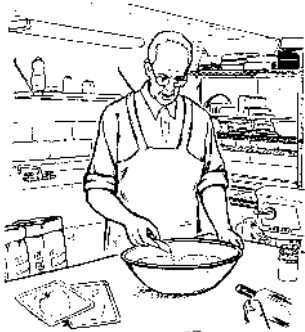


Introduce the LightUnit

Hand out LightUnit 801. Direct students to look over page 1, “To the Student,” and make sure they understand how to work through this diagnostic LightUnit. Tell students that this LightUnit reviews the math skills they need in order to be successful in Math 802-810. If they have not used Sunrise CLE Math before now, this LightUnit will help them determine areas in which they are weak so those areas can be strengthened before they attempt new work in the 800 level. Many students allow their math skills to get a little rusty over summer vacation, so even if they have successfully completed the Sunrise CLE Math 700 level, this LightUnit will help them brush up on their skills so they are ready for the new level.

If you wish, take a few minutes to also read page 2, “Math and Christian Discipleship” with your students. Each of LightUnits 802-810

continues the theme introduced here. As students explore various life occupations through the door of mathematics, they will also learn some of the spiritual aspects of relating to supervisors, employees, and customers. They will be encouraged to do business with integrity, generosity, and the desire to please God above all else. Many of the story problems and the optional nuggets of information placed inside the illustrations throughout LightUnits 802-810 give practical insights and interesting facts about various occupations which are a part of our present Western world.



Math and Christian Discipleship

As you stand on the threshold of eighth grade, you face the end of elementary education. The math LightUnit themes this year will be windows into the lives of people who follow Biblical principles when making decisions each day.

Life provides us with more opportunities than we will ever have time to pursue. Therefore, it is necessary to establish goals for life and to consider each opportunity in light of those goals. God asks that our top priority be to seek His kingdom.

“Seek ye first the kingdom of God and his righteousness, and all these things shall be added unto you.” (Matthew 6:33) In the phrase *all these things*, Christ was referring to the essentials of life—food, clothing, and shelter. These things are important, but they will eventually pass away. The Christian’s primary citizenship is in heaven, and his goals are to use earthly possessions to increase heavenly treasures and bring glory to God. This means a Christian will make some choices that do not make sense to an earthly-minded person.

Many of life’s decisions involve mathematics. As you read the various LightUnit themes and work through the story problems in Math 800, consider the Biblical values and goals that influence the decisions of each person mentioned.

Mathematical skills are like tools. These skills make it possible to do tasks that otherwise would be impossible. Remember you are learning math facts and skills to equip you to help build the kingdom of God.

Lesson **1**

Pretest – Integer Computation

19
21

Ask your teacher to initial the circle before you begin this pretest.

Change each subtraction to adding the opposite. Then combine. (1 point each.) [3]

1. a. $-4 - (-13) = \underline{-4 + (+13) = 9}$ b. $7 - (+25) = \underline{7 + (-25) = -18}$ c. $8 - (-13) = \underline{8 + (+13) = 21}$

Write the products. (1 point each.) [6]

2. a. $-8 \times (-5) = \underline{40}$ b. $-\frac{4}{5} \times \frac{3}{4} = \underline{-\frac{3}{5}}$ c. $\frac{7}{8} \times \frac{4}{5} = \underline{\frac{7}{10}}$
 3. a. $-6 \times 11 = \underline{-66}$ b. $3 \times (-9) = \underline{-27}$ c. $-12 \times (-10) = \underline{120}$

Write the quotients. (1 point each.) [6]

4. a. $-54 \div 6 = \underline{-9}$ b. $-6 \overline{)48} = \underline{-8}$ c. $9 \overline{)45} = \underline{5}$
 5. a. $\frac{-18}{6} = \underline{-3}$ b. $\frac{-22}{-3} = \underline{7\frac{1}{3}}$ c. $\frac{-2}{-10} = \underline{\frac{1}{5}}$

Solve. (1 point each.) [6]

6. a. $-9 + (-6) = \underline{-15}$ b. $-56 \div (-7) = \underline{8}$ c. $9 \times (-7) = \underline{-63}$
 7. a. $-2 - 6 = \underline{-8}$ b. $-8 \times (-6) = \underline{48}$ c. $-4 + 5 = \underline{1}$

Ask your teacher to look over this pretest and mark the boxes on page 5.

I can have 21 answers correct. I must have 19 answers correct to pass. I have ___ correct.
--

Pretest – Integer Computation

Lesson Preparation

- LightUnit 801 for each student
- Read “To the Teacher” just before page 1 of the LightUnit.

Working in the LightUnit

Pretest – Integer Computation

Assign this pretest to the class. Students must have **19** answers correct to pass this test.

Teacher Notes:

Teacher Notes:

Lesson 1

Math Facts to Memorize

The following facts will appear on the pretest in Lesson 2. Make sure you know these facts for success on the pretest. Memorizing these facts will also help you throughout the rest of Math 800.

Formulas

Volume of a cylinder $V = Bh$	Area of a trapezoid $A = \frac{1}{2}(b_1 + b_2)h$
Volume of a rectangular prism $V = lwh$	Area of a parallelogram $A = bh$
Volume of a triangular prism $V = Bh$	

U.S. / Metric Conversions

1 kg \approx 2.2 lb	1 gal \approx 3.8 L	1 mi \approx 1.6 km
1 in \approx 2.54 cm	1 km \approx $\frac{5}{8}$ mi	1 m \approx 1.1 yd

Powers of 2, 3 and 5

2 ³ = 8	2 ⁴ = 16	2 ⁵ = 32
2 ⁶ = 64	3 ³ = 27	5 ³ = 125

Fractions and Their Decimal Equivalents

1/3 = 0.3̄	2/3 = 0.6̄	1/6 = 0.16̄	5/6 = 0.83̄
1/8 = 0.125	3/8 = 0.375	5/8 = 0.625	7/8 = 0.875

Fractions and Their Percent Equivalents

1/3 = 33 1/3 %	2/3 = 66 2/3 %	1/6 = 16 2/3 %	5/6 = 83 1/3 %
1/8 = 12 1/2 %	3/8 = 37 1/2 %	5/8 = 62 1/2 %	7/8 = 87 1/2 %

Symbols

less than or equal to \leq	greater than or equal to \geq
---------------------------------	------------------------------------

4

Math Facts to Memorize and Other Facts to Know –

Students should be familiar with all of the facts and symbols presented on pages 4 and 5 of the LightUnit. Mastery of these facts will be a great asset to them as they work through the material in the Math 800 level. Encourage students to commit to memory any facts they haven't learned previous to this grade level.

Helpful Hint

→ As needed, give students study time, oral practice, or handmade flash cards on the facts from pages 4 and 5 of the LightUnit.

Other Facts to Know

- In the formula $V = Bh$, the capital B stands for the *area of the base*.
- Any number with an exponent of 1 equals the number itself.
- Any number (except 0) with an exponent of 0 equals 1.
- Another name for *average* is *mean*.
- The middle number in an ordered list is the *median*.
- The number that occurs most often in a list is the *mode*.

Lesson 2

Passed Lesson 1 pretest.
 Do the pretest on pages 6, 7.
 Do *Extra Activity* (1, 2, 3, 4, 5, 6, 7, 8, 9).

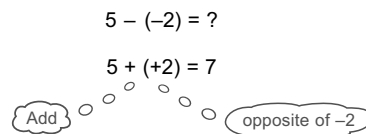
Did not pass Lesson 1 pretest.
 Do all of Lesson 2.

Practice Set – Integer Computation

Introduced in Math 702, Lesson 13.

Subtracting Negative Integers

When we see a subtraction sign, we can think *add the opposite* instead of thinking *subtract*. This helps us avoid confusion when subtracting negative numbers.



Change each subtraction to adding the opposite. Then combine.

- | | | |
|---|---|--|
| 1. a. $-5 - (-18)$
$\underline{-5 + (+18) = 13}$ | b. $6 - (+22)$
$\underline{6 + (-22) = -16}$ | c. $11 - (-19)$
$\underline{11 + (+19) = 30}$ |
|---|---|--|

Practice Set – Integer Computation

Pretest – Math Facts to Know

Lesson Preparation

- Check students' pretests from Lesson 1 and mark the appropriate box in the Lesson 2 heading on page 5 in each students' LightUnit. If you mark the first box indicating that the student passed the first pretest, also circle the number of the extra activity from LightUnit pages 59-68 that you wish him to do this class period.
- Look over the practice set in Lesson 2, and prepare to give extra drill on the concepts with which students had difficulty. Each concept reviewed in a practice set begins with a heading telling where this concept was first introduced in Math 700. If you need additional teaching material, and if you have access to Math

700 LightUnits, it may be helpful for the student to study the material in the previous level before he moves on. Also, the Extra Practice Sheets (Appendix E, pages 412-468) in this guidebook may be copied and used for extra review for students who need it.

- Photocopy Extra Practice Sheets 1 and 2 as needed. (pp. 413-414)

Working in the LightUnit

Practice Set – Integer Computation (for students who did not pass yesterday's pretest.) If you are keeping your students together, those who passed the pretest on integer computation may work on the extra activity you choose for them from pages 59-68 of the LightUnit while you work with the students who need your help to learn the concepts they missed.

Board Work

→ Change each subtraction to adding the opposite. Then combine.

1. $-2 - (-5)$
 $-2 + (+5) = 3$
2. $4 - (+16)$
 $4 + (-16) = -12$
3. $8 - (-5)$
 $8 + (+5) = 13$

Lesson 2

Introduced in Math 706, Lessons 2, 3, and 7.

Rules for Multiplying or Dividing Integers

Same signs = Positive answer

$$6 \times 2 = 12 \qquad -48 \div (-3) = 16$$

$$-6 \times (-2) = 12 \qquad \frac{-48}{-3} = 16$$

Different signs = Negative answer

$$-6 \times 2 = (-12) \qquad 32 \div (-2) = -16$$

$$6 \times (-2) = (-12) \qquad \begin{array}{r} -16 \\ 2 \overline{) -32} \end{array}$$

Write the products.

- | | | |
|---|--|--|
| 2. a. $-9 \times (-4) = \underline{36}$ | b. $\frac{2}{-3} \times \frac{5}{8} = \underline{\frac{5}{-12}}$ | c. $\frac{5}{6} \times \frac{3}{8} = \underline{\frac{5}{16}}$ |
| 3. a. $-8 \times 7 = \underline{-56}$ | b. $5 \times (-7) = \underline{-35}$ | c. $-11 \times (-9) = \underline{99}$ |

Write the quotients.

- | | | |
|--|--|--|
| 4. a. $-35 \div 7 = \underline{-5}$ | b. $\begin{array}{r} -6 \\ -9 \overline{) 54} \end{array}$ | c. $\begin{array}{r} 6 \\ -8 \overline{) -48} \end{array}$ |
| 5. a. $\frac{-24}{8} = \underline{-3}$ | b. $\frac{-26}{-5} = \underline{\frac{51}{5}}$ | c. $\frac{-1}{-5} = \underline{\frac{1}{5}}$ |

Mixed Review of Operations With Integers

Solve.

- | | | |
|-------------------------------------|---------------------------------------|--------------------------------------|
| 6. a. $-7 + (-9) = \underline{-16}$ | b. $-81 \div (-9) = \underline{9}$ | c. $8 \times (-8) = \underline{-64}$ |
| 7. a. $-3 - 9 = \underline{-12}$ | b. $-7 \times (-11) = \underline{77}$ | c. $-5 + 14 = \underline{9}$ |

Pretest – Math Facts To Know



Ask your teacher to initial the circle before you begin this pretest.

Write the answers. (1 point each blank.) [41]

1. The *less than or equal to* symbol is $\underline{\leq}$.
2. The *greater than or equal to* symbol is $\underline{\geq}$.

Board Work

→ Write the products.

$$4. -7 \times (-3) = 21$$

$$5. \frac{2}{-5} \times \frac{5}{6} = \frac{1}{-3}$$

$$6. -12 \times (-3) = 36$$

→ Write the quotients.

$$7. -42 \div 6 = -7$$

$$8. \frac{-12}{-6} = 2$$

$$9. \begin{array}{r} 5 \\ -3 \overline{) -15} \end{array}$$

Lesson 2

Teacher Notes:

3. The middle number in an ordered list is the median.
4. Any number except 0 with an exponent of 0 equals 1.
5. The number that occurs most often in a list is the mode.
6. Any number with an exponent of 1 equals the number itself.
7. The formula for finding the volume of a cylinder is $V = Bh$.
8. The formula for finding the area of a trapezoid is $A = \frac{1}{2}(b_1 + b_2)h$.
9. The formula for finding the volume of a triangular prism is $V = Bh$.
10. The formula for finding the volume of a rectangular prism is $V = lwh$.
11. In the formula $V = Bh$, the capital B stands for the area of the base.
12. a. 1 kilometer \approx $\frac{5}{8}$ mile b. 1 meter \approx 1.1 yards
13. a. 1 gallon \approx 3.8 liters b. 1 mile \approx 1.6 kilometers
14. a. 1 inch = 2.54 centimeters b. 1 kilogram \approx 2.2 pounds
15. a. The decimal for $\frac{5}{8}$ is 0.625. b. The decimal for $\frac{3}{8}$ is 0.375.
16. a. The decimal for $\frac{1}{8}$ is 0.125. b. The decimal for $\frac{7}{8}$ is 0.875.
17. a. The repeating decimal for $\frac{1}{6}$ is 0.1 $\bar{6}$. b. The repeating decimal for $\frac{1}{3}$ is 0. $\bar{3}$.
18. a. The repeating decimal for $\frac{2}{3}$ is 0. $\bar{6}$. b. The repeating decimal for $\frac{5}{6}$ is 0.8 $\bar{3}$.
19. a. Another name for *average* is mean. b. $\frac{2}{3} =$ 66 $\frac{2}{3}$ % c. $2^4 =$ 16
20. a. $5^3 =$ 125 b. $\frac{1}{6} =$ 16 $\frac{2}{3}$ % c. $\frac{7}{8} =$ 87 $\frac{1}{2}$ % d. $2^6 =$ 64
21. a. $\frac{1}{8} =$ 12 $\frac{1}{2}$ % b. $2^5 =$ 32 c. $\frac{5}{8} =$ 62 $\frac{1}{2}$ % d. $\frac{1}{3} =$ 33 $\frac{1}{3}$ %
22. a. $3^3 =$ 27 b. $\frac{3}{8} =$ 37 $\frac{1}{2}$ % c. $2^3 =$ 8 d. $\frac{5}{6} =$ 83 $\frac{1}{3}$ %

Ask your teacher to look over this pretest and mark the box on page 8.

I can have 41 answers correct.
 I must have 37 answers correct to pass.
 I have ___ correct.

Pretest – Math Facts to Know (for all students)

Students must have **37** answers correct to pass this pretest.

Teacher Notes:

Lesson 3 pp. 8-10

Practice Set –
Math Facts to Know

Pretest –
Solving Equations

Lesson Preparation

- Check each student’s pretest from Lesson 2 and mark the appropriate box on page 8 of each LightUnit.
- Look over the practice set in Lesson 3, and note the sections with which students had difficulty on the pretest.

Lesson 3

Passed Lesson 2 pretest.
Do the pretest on pages 9, 10.
Do *Extra Activity* (1, 2, 3, 4, 5, 6, 7, 8, 9).
 Did not pass Lesson 2 pretest.
Do all of Lesson 3.

Practice Set – Math Facts to Know

Introduced throughout Math 700 LightUnits

Math Facts for Memorization

Restudy any parts of pages 6 and 7 that you missed on the pretest before trying the drill below. Once you start, try to answer without looking back.

Write the answers.

1. a. $2^3 = \underline{8}$	b. $2^4 = \underline{16}$	c. $2^5 = \underline{32}$
2. a. $3^3 = \underline{27}$	b. $5^3 = \underline{125}$	c. $2^6 = \underline{64}$

3. The *less than or equal to* symbol is $\underline{\leq}$.
4. The *greater than or equal to* symbol is $\underline{\geq}$.
5. Another name for *average* is $\underline{\text{mean}}$.
6. The middle number in an ordered list is the $\underline{\text{median}}$.
7. The number that occurs most often in a list is the $\underline{\text{mode}}$.
8. Any number except 0 with an exponent of 0 equals $\underline{1}$.
9. Any number with an exponent of $\underline{1}$ equals the number itself.
10. The formula for finding the volume of a cylinder is $\underline{V = Bh}$.
11. The formula for finding the volume of a rectangular prism is $\underline{V = lwh}$.
12. The formula for finding the area of a trapezoid is $\underline{A = \frac{1}{2}(b_1 + b_2)h}$.
13. The formula for finding the volume of a triangular prism is $\underline{V = Bh}$.
14. In the formula $V = Bh$, the capital B stands for the $\underline{\text{area}}$ of the $\underline{\text{base}}$.

15. a. 1 gallon $\approx \underline{3.8}$ liters	b. 1 meter $\approx \underline{1.1}$ yards
16. a. 1 mile $\approx \underline{1.6}$ kilometers	b. 1 kilometer $\approx \underline{\frac{5}{8}}$ mile
17. a. 1 inch = $\underline{2.54}$ centimeters	b. 1 kilogram $\approx \underline{2.2}$ pounds
18. a. The decimal for $\frac{1}{8}$ is $\underline{0.125}$.	b. The decimal for $\frac{3}{8}$ is $\underline{0.375}$.

8

Working in the LightUnit

Practice Set – Math Facts to Know (for students who did not pass yesterday’s pretest)

Helpful Hint

→ Use handmade flash cards, wall posters, or whatever will help your students memorize the math facts from pages 4 and 5 of the LightUnit.

Lesson 3

Teacher Notes:

19. a. The decimal for $\frac{5}{8}$ is 0.625. b. The decimal for $\frac{7}{8}$ is 0.875.
20. a. The repeating decimal for $\frac{1}{3}$ is $0.\overline{3}$. b. The repeating decimal for $\frac{2}{3}$ is $0.\overline{6}$.
21. a. The repeating decimal for $\frac{1}{6}$ is $0.1\overline{6}$. b. The repeating decimal for $\frac{5}{6}$ is $0.8\overline{3}$.
22. a. $\frac{1}{3} = \underline{33\overline{3}}\%$ b. $\frac{2}{3} = \underline{66\overline{3}}\%$ c. $\frac{1}{6} = \underline{16\overline{3}}\%$ d. $\frac{5}{6} = \underline{83\overline{3}}\%$
23. a. $\frac{1}{8} = \underline{12\overline{2}}\%$ b. $\frac{3}{8} = \underline{37\overline{2}}\%$ c. $\frac{5}{8} = \underline{62\overline{2}}\%$ d. $\frac{7}{8} = \underline{87\overline{2}}\%$

Pretest – Solving Equations



Ask your teacher to initial the circle before you begin this pretest.

Solve. (1 point each.) [4]

1. a. $16 + \frac{y}{8} = 25$	b. $3n - 7 = 15$	c. $8x + 25 = 28$	d. $35 = \frac{x}{5} + 29$
$\frac{-16}{\quad} \quad \frac{-16}{\quad}$	$\frac{+7}{3} \quad \frac{+7}{3}$	$\frac{-25}{8} \quad \frac{-25}{8}$	$\frac{-29}{\quad} \quad \frac{-29}{\quad}$
$\frac{y}{8} = 9$	$\frac{3n}{3} = \frac{22}{3}$	$\frac{8x}{8} = \frac{3}{8}$	$6 = \frac{x}{5}$
$\frac{y}{8} \cdot 8 = 9 \cdot 8$	$n = 7\frac{1}{3}$	$x = \frac{3}{8}$	$6 \cdot 5 = \frac{x}{5} \cdot 5$
$y = 72$			$30 = x$

Simplify and solve. (1 point each.) [6] Number of steps in solutions may vary.

2. a. $3 + 6 \cdot 8 = 3n + 9 + n - 2$	b. $36 \div 6 + 3 \cdot 2 = n + 42 \div 7$	c. $2(x + 3) = 3^2 + 3(5)$
$3 + 48 = 4n + 7$	$6 + 6 = n + 6$	$2x + 6 = 9 + 15$
$51 = 4n + 7$	$12 = n + 6$	$2x + 6 = 24$
$\frac{-7}{\quad} \quad \frac{-7}{\quad}$	$\frac{-6}{6} \quad \frac{-6}{6}$	$\frac{-6}{2} \quad \frac{-6}{2}$
$\frac{44}{4} = \frac{4n}{4}$	$6 = n$	$\frac{2x}{2} = \frac{18}{2}$
$11 = n$		$x = 9$

Pretest – Solving Equations (for all students)

Assign this pretest to the class. Students must have 16 answers correct to pass this pretest.

Teacher Notes:

Teacher Notes:

Lesson 3

3. a. $3(x + 5) = 3^3 - 2(3)$

$$3x + 15 = 27 - 6$$

$$3x + 15 = 21$$

$$\begin{array}{r} -15 \ -15 \\ \hline 3x = 6 \\ \frac{3x}{3} = \frac{6}{3} \end{array}$$

$$x = 2$$

b. $48 \div 2^3 = 9n + n$

$$48 \div 8 = 10n$$

$$\frac{6}{10} = \frac{10n}{10}$$

$$\frac{3}{5} = n$$

c. $7n + 30 \div 6 = 6 \times 9 + 7$

$$7n + 5 = 54 + 7$$

$$7n + 5 = 61$$

$$\begin{array}{r} -5 \ -5 \\ \hline 7n = 56 \\ \frac{7n}{7} = \frac{56}{7} \end{array}$$

$$n = 8$$

Translate the sentences into equations. Use n for the variable. (1 point each.) [4]

4. The quotient of a number and twenty-five is six. $\frac{n}{25} = 6$

5. Twelve more than a number is sixteen. $n + 12 = 16$

6. The difference between a number and nine is sixteen. $n - 9 = 16$

7. Twice a number is twenty-four. $2n = 24$

Choose the correct equation for each story problem. Solve. (1 point each blank.) [4]

8. Ryan's age decreased by 5 is 9. How old is Ryan?

$$r + 5 = 9$$

$$9 - r = 5$$

$$r - 5 = 9$$

$$r - 5 = 9$$

$$+5 \ +5$$

$$r = 14$$

a. Equation: $r - 5 = 9$ b. Answer: 14 years old

9. Dad's age is 2 less than 3 times Jared's age. Jared is 14. How old is Dad?

$$3d = 14 - 2$$

$$d = 3(14) - 2$$

$$d - 2 = 3(14)$$

$$d = 3(14) - 2$$

a. Equation: $d = 3(14) - 2$ b. Answer: 40 years old

$$d = 42 - 2$$

$$d = 40$$



Ask your teacher to look over this pretest and mark the box on the next page.

I can have 18 answers correct.
I must have 16 answers correct to pass.
I have ____ correct.

Teacher Notes:
