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## - Introduction



The primary goal of math instruction is to help your student comprehend how to utilize mathematics in his everyday life to the glory of God. It is important to teach your student that God is the Author of mathematics and that creation itself testifies of the Lord's genius. In the Bible we

learn that all facts and numbers were created by God. It was the Lord alone who gave meaning, purpose, and value to numbers in the beginning when God created our world. May you, as the instructor, approach the teaching of math precepts with genuine enthusiasm and cause your student to become excited about his studies as well.

Although it takes time, it is important to read the materials written for you in the teacher's manual as well as in the opening of each workbook lesson. They will prepare you to be equipped and feel more confident
about your task. It is also important to provide extra supplemental drills for each lesson, going beyond what is on each workbook page. What may seem simple to you is brand new to your student. For this reason, we encourage the use of enrichment activities at the blackboard or on the computer, and familiar tools such as flashcards or hands-on math games.

This workbook has been divided into various sections, as the table of contents shows. Thus, it should be noted that the first section of the workbook is essentially a review of the ideas and facts introduced in Liberty Mathematics Level A. If some areas are unfamiliar to your student, review them with extra drills.

This book is possible only because of the Lord's constant guidance and blessing. Great appreciation is also expressed to all of those who provided such helpful assistance and directions.

May students who complete these lessons seek to glorify God in their preparation to be our country's future leaders. May teachers pray and labor diligently so that the Lord would bless their teaching efforts.


Trust in the Lord with all your heart, and do not lean on your own understanding. In all your ways acknowledge Him, and He shall direct your paths.

- Proverbs 3:5-6-


## Review

* Add or subtract to solve these problems. Watch the signs!
6
5
8

8
$+2$
$+7$
$-6$
$+7$
$+9$
$\begin{array}{r}15 \\ -12 \\ \hline\end{array}$
17


| 2
$-8$
14
6
9
| |
13
$-7$
$+5$
$-7$
$-3$
$+2$
16
9
$\begin{array}{r}8 \\ -4 \\ \hline\end{array}$
6
18
- 8
$+5$
$+7$
$-11$

Q Put in the correct symbols.

| 75 | $>$ | 93 | 9 |
| :--- | :--- | :--- | :--- |
| $15<20$ | 96 | 18 | 57 |
| 127 | 471 | 82 |  |
| $63-48$ | $86-41$ | 92 | 87 |
| $22-15$ | $27-18$ | $63-61$ |  |

The position of each number in a math fact has a special name. In this lesson, you will learn the names of the number positions in addition and subtraction facts.

Learn how to spell these names correctly.

## 4 addend $+\frac{3}{}$ add <br> 3 addend <br> $\frac{+4}{7}$ addend

$\qquad$
7 minuend $\frac{-3}{4}$ subtrahend
difference

7 minuend

- 4 subtrahend 3 difference

In addition, the numbers added together are called addends. It does not matter what order the addends are in.
The number that the addends add up to, or the answer, is called the sum.

In subtraction, the number you start with is called the minuend. The number you subtract from the minuend is called the subtrahend. The answer is called the difference.
The order of the minuend and subtrahend is important; that is why they have different names.

When solving an addition problem with more than one column, remember that you may need to add more than one numeral in the second column.


The sum of $5+6$ is II. Carry the numeral I to the tens column. Add this $\mid$ to the 2 , then add the sum to the 4 .

Add to solve these problems.

| $\square$ |
| ---: |
| 22 |
| +39 |


$\square_{34}$

$+46$
$+15$

$+26$
$+23$
$+22$
$+24$

$+28$
+59
$+17$
$+39$

$+18$
$+58$
$+29$
$+36$

## Thousands Place Value

$\qquad$
( Write the numerals in their proper places.

| Number | Thousands | Hundreds | Tens | Ones |
| :---: | :---: | :---: | :---: | :---: |
| 5,423 |  |  |  |  |
| 1,031 |  |  |  |  |
| 2,682 |  |  |  |  |
| 9,999 |  |  |  |  |

What number is this? Write the number in the last column. Do not forget the comma!

| Thousands | Hundreds | Tens | Ones | Number |
| :---: | :---: | :---: | :---: | :---: |
| 6 | 3 | 1 | 0 |  |
| 8 | 4 | 2 | 2 |  |
| 3 | 6 | 2 | 0 |  |
| 1 | 3 | 4 | 2 |  |

(2) Count the tallies.

$\qquad$ W WI $\qquad$

$\qquad$ N| $\qquad$

Write the tallies for the numbers.
7 $\qquad$ 13
_19
2) Circle the fact if the symbol is correct. If it is not correct, cross it out.
$7>15$
$21<32$ $\square$ $18>12$
$76<55$
$\vdots$
$\vdots$
$\vdots$
$\vdots$
$\vdots$
$\vdots$


## More About Time

There are 24 hours in a day, but there are only 12 hours on a regular clock face. Two 12's equal 24 . The hour hand goes all the way around the clock two times in an entire day to make 24 hours.

The hours in between 12:00 midnight and 12:00 noon are the morning hours. They are called the "a.m." hours. The hours between 12:00 noon and 12:00 midnight are the afternoon and the evening hours. They are called the "p.m." hours.
(2) Solve these story problems.

James woke up early and made breakfast for the whole family. Circle the time they ate.
6:30
p.m.
7:30
am.
10:45 p.m

Kim had to go to bed early. She had to get up for Sunday School. Circle her bedtime.
2:00 arm. 9:00 arm. 8:00 p.m
(2) Match the clocks with the correct times.


8:53


Time Problems
Sam started his baseball game at 1:00 p.m. He played until 3:00 p.m. How long did he play? 1:00 p.m. 2:00 p.m. 3:00 p.m. $\overbrace{\text { phrs. }}^{1 \text { hr. }}$
$3-1=$ $\qquad$ hrs.

Joelle began to read her new book at 6:00 p.m. Her mother told her to go to bed at 9:00 p.m. How long did she read?
6:00 p.m. 7:00 p.m. 8:00 p.m. 9:0ิ0 p.m. $=$
 $9-6=\quad$ hrs.

Kurt went to his friend's house at I0:00 a.m. He came home at 5:00 p.m. How long was he at his friend's house? 10:00 a.m. 11:00 a.m. 12:00 p.m. 10:00 a.m. to 12:00 p.m. is 2 hrs .


12:00 p.m. to 5:00 p.m. is 5 hrs.
2 hrs. +5 hrs. =__ hrs.

## Carrying \& Borrowing

Practice your math facts, as needed. Remember to work carefully and neatly!
2 Add to solve these problems.
623
1,586
27
54
$+229$
$+4,235$
$+38$
$+36$
$\begin{array}{r}4,852 \\ +2,268 \\ \hline\end{array}$
3,707
87
44
4,536
+4
$+8$
$+38$
(2) Subtract to solve these problems.
523
7,348
86
27
$-318$
$-2,786$
$-34$
$-9$

| 5,824 | 9,002 | 54 | 67 |
| ---: | ---: | ---: | ---: |
| $-3,665$ | $-6,401$ | -27 | -19 |

(2) Count the value of these coins.

$\qquad$

## Counting Back Change

$\qquad$

The following problems will help you understand the idea of counting back change. The best way to understand this concept is to practice, using real or play money.
( Count back change for the following problems. The first one is done as an example.
Cost of Item: $\$ 1.83 \quad$ Money Given: $\$ 2.00 \quad$ Check your work!
$\$ 1.83$

$\begin{array}{r}\$ 2.00 \\ -\quad 1.83 \\ \hline \$ 0.17\end{array}$

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Cost of Item: $12 \Phi \quad$ Money Given: 25 \$
Check your work!
$12 \phi$
(a) - -

Cost of Item: $42 \Phi \quad$ Money Given: $\$ 1.00$
Check your work! $42 \phi$

$\qquad$

| $\$ 1.00$ |
| ---: |
| $-\quad .42$ |

Cost of Item: $\$ 3.24 \quad$ Money Given: $\$ 5.00$
Check your work!
\$3.24


## Bubble Answers

If necessary, sometimes you may take tests in which you have to pick the correct answer from several choices. You still have to figure out the correct answer and then choose the answer that matches.

Be sure to show you work for each problem before filling in the correct circle.
Example: Jordan had 10 pennies. He spent 4 pennies. How many pennies did he have left?
O 3 pennies
6 pennies
O 8 pennies
O 5 pennies

| $10 \phi$ |
| ---: |
| $-\quad 4 \phi$ |
| $6 \phi$ |

You would write out the problem like this: $10-4=6$
Next, you fill in the bubble next to 6 pennies, which is the correct answer.
Solve these story problems. Do each step carefully.
Kim has 6 hair ribbons. Kelly has 8 .
How many do they have altogether?

O 12 ribbons
O 15 ribbons
O 14 ribbons
O 13 ribbons

Rachel read 45 books last summer. Becky read 82 . How many more did Becky read?
O 42 books
O 35 books
O 43 books
O 37 books


Ken's dog had 8 puppies. His sister's cat had 5 kittens.
His brother's gerbil had 2 babies. How many baby animals did they have altogether?

Measuring
A measure tells us how much of a thing there is. We have different measures for time, distrance (length), and volume (how much fits inside an object).

## Time Measures

1 minute $=60$ seconds
$\mid$ year $=365$ days
| hour = 60 minutes
1 day $=24$ hours
| week = 7 days
$-m--m$
| leap year = 366 days
1 month $=28-31$ days
1 year = 12 months


## Length Measures

1 foot $=12$ inches
I mile $=5,280$ feet
1 yard $=3$ feet
1 mile $=1,760$ yards
| yard = 36 inches
Volume Measures
| pint = 2 cups
| quart = 2 pints
$\mathrm{l} / 2$ gallon $=2$ quarts
| gallon = 4 quarts


* Match these time measures.
I minute
I hour
I day
${ }_{74}$ year
24 hours
365 days
60 minutes
60 seconds


More Fractions

Pizza \#|


Pizza \#l is cut into 4 pieces.


Pizza \#2 is cut into 8 pieces.

If you were very hungry, which pizza would you want one piece of?
First, you can see that the one cut into only 4 pieces has bigger slices. The more pieces you cut something into, the smaller each piece will be.

So, if you were very hungry, which pizza would you want one piece of? Fill in the correct bubble. $\quad$ pizza \#l O pizza \#2

## Q Circle the piece or fraction that is bigger.



1/4


1/8
|/4



1/3

|/2


1/4


I/2

|/8

## Multiplying by 3


(2) Multiply.
9

10


8
6

$$
\times 3
$$

$\times 3$ $\times 3$ 8
$\times 3$ $\times 3$ 6
$\times 3$


2


5
$\times 3$

$\times 3$
$\times 3$


3


3
$\times 4$
$\times 6$

$\begin{array}{r}9 \\ \times \\ \hline\end{array}$

Solve this story problem.
Sue's uncle gave each of his 10 nieces and nephews 3 candies. How many candies did he give in all? $\qquad$ candies

## Multiplication Speed Drills

Work on these multiplication facts quickly and carefully.

| $\begin{array}{r}3 \\ \times 4 \\ \hline\end{array}$ | $\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$ | $\begin{array}{r}8 \\ \times 4 \\ \hline\end{array}$ | $\begin{array}{r}7 \\ \times 2 \\ \hline\end{array}$ | $\begin{array}{r} 12 \\ \times 5 \\ \hline \end{array}$ | $\begin{array}{r}6 \\ \times 4 \\ \hline\end{array}$ | +5 | $\begin{array}{r}11 \\ \times 2 \\ \hline\end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6 | 7 | 2 | 8 | 9 | 5 | 2 | 4 |
| $\begin{array}{r}6 \\ \times \\ \hline\end{array}$ | +3 | +2 | x 1 | +3 | +4 | +6 | +4 |
| 9 | 3 | 11 | 9 | 8 | 8 | 6 | 12 |
| $\begin{array}{r}9 \\ \times 4 \\ \hline\end{array}$ | +5 | +5 | +2 | +5 | +3 | $\begin{array}{r}6 \\ \times \\ \hline\end{array}$ | +4 |
| Number Wrong ___ Time |  |  |  | Number Wrong |  | Time |  |
| 4 | 5 | 2 | 2 | 5 | 4 | 3 | 2 |
| $\times 11$ | 5 $\times 7$ | +3 | +5 | +10 | $\times 3$ | $\times 11$ | $\mathrm{x} \mid 2$ |
| 3 | 3 | 2 | 4 | 3 | 2 | 5 | 5 |
| +8 | $\underline{x} 12$ | +5 | $\times 7$ | +3 | $\times 8$ | +7 | $\begin{array}{r} \\ \times 9 \\ \hline\end{array}$ |
|  | 2 | 4 | 3 | 4 | 5 | 2 | 4 |
| +4 | +8 |  | +10 | +6 |  | +3 | $\times 2$ |
| Number 174 | Wrong |  | me | Number Wrong | g | Time |  |

Division Review

* Divide.

| $4 \sqrt{40}$ | $4 \sqrt{48}$ | $4 \sqrt{12}$ | $4 \sqrt{4}$ |
| :--- | :--- | :--- | :--- |
| $4 \sqrt{36}$ | $4 \sqrt{20}$ | $4 \sqrt{16}$ | $4 \sqrt{8}$ |
| $4 \sqrt{24}$ | $4 \sqrt{32}$ | $4 \sqrt{28}$ | $4 \sqrt{44}$ |
| $4 \sqrt{20}$ | $4 \sqrt{4}$ | $4 \sqrt{44}$ | $4 \sqrt{36}$ |
| $4 \sqrt{12}$ | $4 \sqrt{32}$ | $4 \sqrt{8}$ | $4 \sqrt{16}$ |
| $4 \sqrt{24}$ | $4 \sqrt{40}$ | $4 \sqrt{20}$ | $4 \sqrt{28}$ |

D Divide.

$$
\begin{aligned}
& 4 \div 4= \\
& 8 \div 4= \\
& 12 \div 4= \\
& 16 \div 4= \\
& 0 \div 4= \\
& 2 \div 4=
\end{aligned} \begin{array}{r}
28 \div 4= \\
32 \div 4= \\
36 \div 4= \\
40 \div 4= \\
44 \div 4= \\
44 \\
48 \div 4=
\end{array}
$$

## Division Review

Use flashcards to review the division facts you have learned so far. Do not forget to review the multiplication facts, as well!

Divide.
$1 \longdiv { 8 }$
$2 \longdiv { 1 2 }$
$1 \longdiv { 4 }$
$3 \longdiv { 3 }$
$2 \longdiv { 1 6 }$
$3 \longdiv { 1 5 }$
$2 \longdiv { 2 4 }$
$3 \longdiv { 2 4 }$
$3 \longdiv { 1 8 }$
$2 \longdiv { 6 }$
$3 \longdiv { 3 6 }$
$5 \longdiv { 0 }$
$2 \longdiv { 1 8 }$
$2 \longdiv { 1 0 }$
$3 \longdiv { 9 }$
$3 \longdiv { 1 2 }$
$2 \longdiv { 1 8 }$
$1 \longdiv { 1 8 }$
$2 \longdiv { 2 0 }$
$3 \longdiv { 3 }$

D Divide.

$$
\begin{array}{r}
6 \div 3= \\
6 \div 2= \\
21 \div 3= \\
24 \div 2= \\
27 \div 3= \\
18 \div 3=
\end{array} \begin{array}{r}
30 \div 3= \\
24 \div 3= \\
9 \div 3= \\
14 \div 2= \\
33 \div 3= \\
0 \div 6=
\end{array}
$$

## Balance in Equations

In this lesson you will learn a new word; this word is "equation."
An equation is a math statement that says something is equal to something else.
The math facts that you have studied can be written as equations. See the examples below.

$$
\begin{array}{ll}
5+2=7 & \text { This is an equation that says a group of } 5 \text { plus } \\
\because \because & \text { a group of } 2 \text { is the same as a group of } 7 .
\end{array}
$$



This is an equation that says a group of 8 minus a group of 4 is the same as a group of 4 .

A balanced equation uses an equal sign ( $=$ ). This means that whatever the solution is on one side of the equation must equal the solution on the other side. The two sides of the equation must balance; both sides are equal. If they do not balance, they are not equal and the equatron is not true (i.e., false).

Have you been on a teeter-totter?
If a child on one side of a teeter-totter weighs the same as a child on the other side, then the teeter-totter will stay balanced.


This is like balance in equations; the solutions on both sides of the equation must be equal. Example: $3+4=2+5$. Both sides of the equation equal 7 .

[^0]$\qquad$

Here is a map of the zoo. Answer the questions about the map.


Which animals are in the building east of the reptiles?
Which animals are south of the Ape House?
How far is it from the picnic area to the gift shop? $\qquad$ feet If the zoo caretakers had to hurry to the Ape House, how far would they need to run? $\qquad$ feet
Is the entrance closer to the lions or the elephants? $\qquad$

## Story Problems

Solve these story problems.
Five friends went to a baseball game.
They bought tickets that cost $\$ 1 I$ each.
How much did all of the tickets cost? \$ $\qquad$
What kind of a math problem is this?

John bought 3 kinds of food at the baseball game. He bought a slice of pizza for $\$ 2.50$, a hot dog for $\$ 2.25$, and pop for $\$ 2$. How much change did he get from a $\$ 10$ bill?

How much did all the food cost? \$
How much less than $\$ 10.00$ was the food? $\$$


Kim's mom cut 2 large pizzas into 10 pieces each.
Five very hungry girls shared them equally.


How many pieces did each girl get?
How many pieces were there altogether? $\qquad$ pieces How many pieces did each girl get? $\qquad$ pieces

Megan brought 2 dozen cupcakes to school for her birthday. She gave one cupcake to each of the 17 students in her class. She also gave one cupcake to each of her 2 teachers. How many cupcakes will she have left over?


How many cupcakes did she make? $\qquad$ cupcakes How many people did she give cupcakes to? $\qquad$ How many cupcakes will she have left over?


[^0]:    Q Are these equations true or false? Write the answer on the line.
    $6+4=5+5$
    $8 \div 2=9-5$
    $8+5=9+4$
    $6-2=3+3$
    $\left[\begin{array}{l}8 \div 2=9-5 \\ 3 \times 2=7-3 \\ 10-9=1 \div 1\end{array}\right.$

