

Life of Fred™
Liver

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A Note Before We Begin

There are good ways to teach her how to cook and there are bad ways.



my daughter Jill

Rule #1: Don't just hand her a spoon, some cans of soup, and some pots and expect her to be a success.

Rule #2: Don't rush things. There is a right time to hand the cooking student a spoon, a pot, and a can of soup.



There are good ways to teach arithmetic and there are bad ways.

Rule #1: Don't just hand the student "math facts" and expect success. Most students are not robots, and they shouldn't be treated like robots.

Many traditional arithmetic books present their lessons this way:

Here is how you do this, and here are 30 problems.

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Who reads those kinds of books *for fun*?

Kids will read those horrible books *just to please their parents*, not because they want to. And they end up hating math.



"Hey, kid. Just memorize all these facts."

Arithmetic is a part of real life—such as Fred’s life. If you boil it down to just a bunch of procedures, it becomes as interesting as reading a phone book.

Rule #2: Don’t rush things. Learning math is not a race in which you are trying to beat others.

Brains, even those of geniuses, take time to develop. It would be silly to try and teach the antiderivative of $\tan x$ to three-month-olds.* That would be as silly as what I did over 40 years ago when I put my daughter on a bed and surrounded her with pots, cans, and a spoon.

GENERAL GUIDELINES

A) Please wait until at least the fifth grade before starting *Life of Fred: Fractions*.

Even if you were to wait until the 7th grade and have normal intelligence and drive, you would be into college calculus (*Life of Fred: Calculus*) before the end of your high school years. There is no rush.

B) Students learn algebra much, much, much, much, much better after they have started to get some hair under their arms. (That’s an old saying.)

Before starting *Life of Fred: Beginning Algebra* together with its study guide *Fred’s Home Companion: Beginning Algebra*, check the armpits. These two books will take the student through a complete first year of high school algebra in 108 daily lessons.

When the student is ready, the math comes easily.

RIGHT NOW

It is the perfect time to:

- ☺ learn about livers
- ☺ practice some addition and multiplication
- ☺ experience some of Fred’s adventures in life
- ☺ see a preview of fractions
- ☺ memorize the two rules of survival
- ☺ . . . and much more.

* . . . from calculus:

$$\int \tan x \, dx = \int \frac{\sin x}{\cos x} \, dx = \ln (\cos x) + C$$

HOW THIS BOOK IS ORGANIZED

Each chapter is about six pages. At the end of each chapter is a *Your Turn to Play*.

Have a paper and pencil handy before you sit down to read.

Each *Your Turn to Play* consists of about three or four questions. Write out the answers—don't just answer them orally.

After all the questions are answered, then take a peek at my answers that are given on the page following the questions.

Don't just read the questions and look at the answers.

CALCULATORS?

Not now. There will be plenty of time later after finishing *Life of Fred: Fractions* and *Life of Fred: Decimals and Percents*.

Right now, in arithmetic, our job is to learn the addition and multiplication facts by heart.

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Chapter One

Toward the Camp

The bus stopped at the blood bank. Miss Ente trotted up. Fred knew that he was at the right place. He thanked the driver and hopped off the bus.



Fred was excited. Nine days of adventure at Camp Horsey-Ducky lay ahead of him. Miss Ente, the owner of the camp, was there to meet him. Fred felt very special.

Fred put down his lunch box, which he was using as a suitcase. He put his dozen set theory books and his algebra books on top of his suitcase so that they wouldn't get dirty.



The bus driver unloaded the dozen boxes that contained all the things that Fred thought he might need for camp: extra-small cowboy hat, neckerchief, rope for cows, gloves to avoid rope burns, silver spurs (with gold trim), harmonica, sundial (in case there were no clocks at the camp), mosquito spray, sun screen, campfire songbook, bow and arrows for target practice, compass, bandages, ax, canteen, poison oak soap, lantern, pancake turner (for cooking breakfast in the great outdoors), six iron frying pans of various sizes, and a case of flares (to signal for help in case of an emergency).

Fred pictured himself riding the range for nine days, probably driving cattle under the blazing sun. In the evening, he and the other cowboys and cowgirls would cook their grub over a campfire. Just before bedtime they would sit in a circle and sing "Home on the Range."

This was Fred's fantasy. Or should we say **Fred's Fantasy**? All he really knew was what was in that newspaper ad. It had promised life in the outdoors, horses, and thrills. Fred had never asked Miss Ente for any more information.

Fred had given Miss Ente the \$300 camp fee when they had met at the bus stop near KITTENS. What lay ahead for Fred could be almost anything.

At one extreme, Camp Horsey-Ducky could be very tame. It might be nine days of a petting zoo. Each of the campers could walk around petting llamas, horses, cows, and ducks under shady trees. After a day or two, this would get very boring.

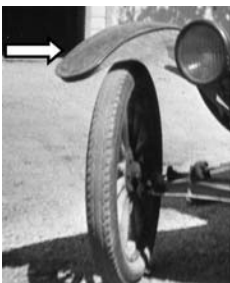
At the other extreme, Camp Horsey-Ducky might be a military training camp: up at 4:00 every morning, pushups, boxing, survival exercises under the blazing sun, swimming muddy rivers, and bedtime at 10:00 every night.

Fred had not asked before he signed up and gave his money.

“My oh my. You have a lot of stuff,” Miss Ente said. “You won’t be able to carry it all. Just put it in the camp car. Hop in and we’ll get you to the camp in a jiffy.”



Fred carefully loaded his twelve boxes, his math books, and his lunch box into the car. He noticed that the car had real fenders (the part over the wheels to keep mud from splashing up.)



He also noticed that his stuff had filled the car. He could not “hop in” as Miss Ente had requested. Instead, he hopped on. He rode on the hood of the car like a real cowboy.

He wondered how anyone would be able to drive.

Miss Ente threw a rope around the radiator and pulled the car down the road.



The ad for Camp Horsey-Ducky had promised life in the outdoors, horses, and thrills.

✓ It certainly was outdoors.

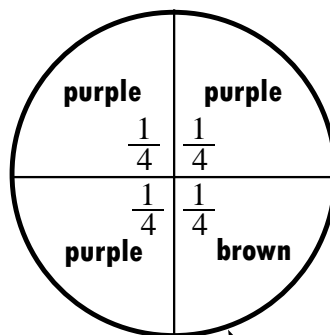
✓ There was a horse.

✓ Thrills? The road was very bumpy. Miss Ente was pulling the car very fast. Riding on the hood of the car was like being on a bucking horse. He was frightened that he might fall off.



He did.

He lay on the ground for a minute and wondered if he had broken anything. He hadn't. He wondered if he was bleeding. He wasn't. He wondered if he was bruised. He checked all of the 644 square inches of skin on his body. Three-fourths of his body was covered with purple bruises. The rest of his body was brown with road dirt.



$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}$$

When you get to *Life of Fred: Fractions*, then we will draw pictures like this and we will add fractions like this. But not now.



Goodbye to the camp car

Fred stood up. The twelve boxes, his lunch box, his math books, the camp car, and Miss Ente were all disappearing into the distance.

small essay

Two Kinds of Hurting

Three-fourths of Fred's body was covered with purple bruises. This is one kind of hurt. Your body can hurt in many ways: cuts, bruises, toothache, broken bones, or tummy ache.

The second kind of hurt can often be worse. It is the hurt you feel in your mind: loneliness, fear, loss of a pet, or despair.

end of small essay

Fred had both kinds of hurting. Fred wept. Some of his tears rolled down his cheeks and onto his shirt. Some rolled down his nose and onto the ground.*

Fred took out his handkerchief. He decided to wipe his eyes before he blew his nose. Those two actions are not commutative. If he had blown his nose first, it would make a mess if he wiped his eyes afterward.

It's not much fun to get snot in your eyes.

* This is one advantage (of many) of having a large nose. Your shirt doesn't get as wet when you cry.

In doing the *Your Turn to Play*, please write out all your answers before turning to look at the answers on the next page. It is certainly easier to just look at the questions and then look at the answers, but you will not learn as much if you do that.

Your Turn to Play

1. Is addition commutative? I.e., is it always true that $a + b$ equals $b + a$ for any two numbers?

If it is not true, give an example of when $a + b \neq b + a$.

Here are four common abbreviations in English:

i.e. = *that is to say*
e.g. = *for example*
viz. = *namely*
etc. = *and so on*

\neq means
“not equal to”

2. Is subtraction commutative—i.e., is it always true that $a - b$ equals $b - a$ for any two numbers?

If it is not true, give an example of when $a - b \neq b - a$.

3. If Camp Horsey-Ducky were a military training camp in which you got up at 4 a.m. and went to bed at 10 p.m., how many hours would you be awake each day?

4. If you went to bed at 10 p.m. and woke at 4 a.m., how many hours would you have slept?

5. Three-fourths ($\frac{3}{4}$) of the 644 square inches of his body was bruised. How many square inches was that?

Hints: To find $\frac{2}{3}$ of 18, you multiply 18 by 2 and then divide by 3. (answer = 12)

To find $\frac{3}{5}$ of 30, you multiply 30 by 3 and then divide by 5. (answer = 18)

To find $\frac{1}{4}$ of 36, you multiply by 1 and then divide by 4. (answer = 9)

..... COMPLETE SOLUTIONS

1. Yes. Addition is commutative. For any two numbers it is always true that $a + b = b + a$.

Multiplication is also commutative. $ab = ba$

2. No. Subtraction is not commutative.

For example, $7 - 3 \neq 3 - 7$

Neither is division.

3. 18 hours.

4 a.m. to noon is 8 hours.

Noon to 10 p.m. is 10 hours.

4. 6 hours.

10 p.m. to midnight is 2 hours.

Midnight to 4 a.m. is 4 hours.

5. 483 square inches of Fred's body were bruised.

$\frac{3}{4}$ of 644 means 644 times 3 and then divide by 4.

$$\begin{array}{r} 644 \\ \times 3 \\ \hline 1932 \end{array}$$

$$\begin{array}{r} 483 \\ 4 \overline{)1932} \\ \underline{16} \\ 33 \\ \underline{32} \\ 12 \\ \underline{12} \\ 0 \end{array}$$

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