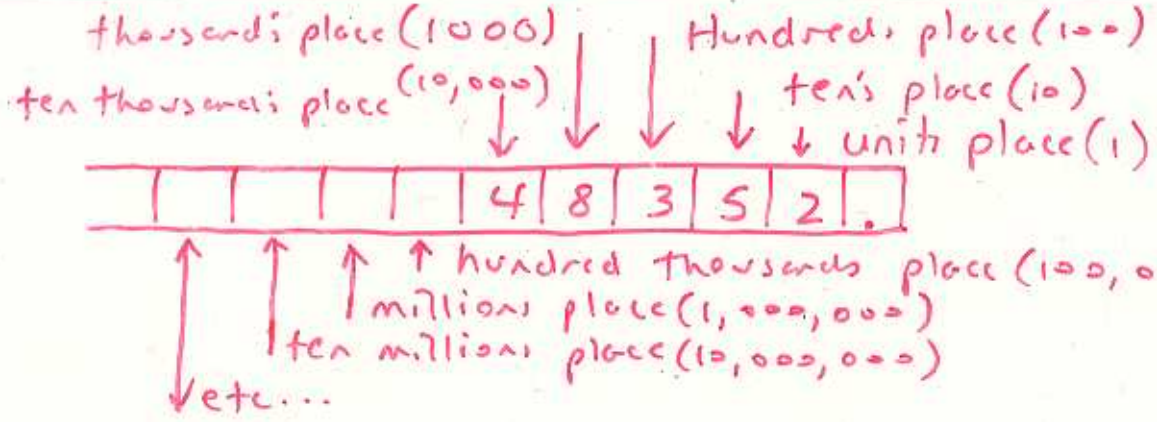
Lesson 1a Notes

In our Hindu-Arabic system, we use 10 different symbols called digits. Where the digit appears in a number determines that numbers value.



1.B Notes

All numbers between 20 and 100 That do not end in zero are hyphenated (i.e. 23 = twenty-three). The word "and" means decimal, therefore we never say "and" when referring to whole numbers. (i.e. 501 = five hundred one, not five hundred and one). A hyphen is also used when words modify a digits place (i.e. ten-thousands place).

1.C Notes

expanded form helps practice the idea of place value.

1.D Notes

When we add numbers, we call the numbers addends, and the answer The sum.

$$\begin{array}{r} 523 \text{ - addend} \\ 619 \text{ - addend} \\ +\ 512 \text{ - addend} \\ \hline 1654 \text{ - sum} \end{array}$$

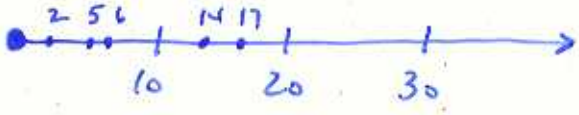
We write the numbers so that all the last digits are aligned vertically.

Paige M.

Lesson 2a Notes

A ray is an arrow that points from left to right. The left-end side of a ray is called the origin.

When we put a dot on a ray to mark a location, we graph the point. Graph points 5, 14, 17, 2, 6



2b Notes

We often use the rounded form of a number. We may round to the nearest 10, 100, 1000, etc...

Steps to Round

(A) Circle the digit to round and place an arrow over the digit to its right.

$2(4), \overset{\downarrow}{3}\,74$

(B) If the arrow marked digit is five or greater increase the circled digit by one

If the arrow marked digit is less than five, leave the circled digit as is.

$24,000$

Always Conquer

Lesson 3 - Subtraction Patterns

When we subtract, we find the <u>difference</u> between two numbers.

We can check an addition or subtraction problem by doing the <u>inverse operation</u>

(A)
$$\begin{array}{r} 61 \\ +\ 32 \\ \hline 93 \end{array}$$

(B) "check"
$$\begin{array}{r} 93 \\ -\ 61 \\ \hline 32 \end{array} \quad \text{or} \quad \begin{array}{r} 93 \\ -\ 32 \\ \hline 61 \end{array}$$

Lesson (4a) Notes: Multiplication, Division Patterns

7×4 means 7 four times or $7+7+7+7$
and 4 seven times or $4+4+4+4+4+4+4$
hence $7 \times 4 = 4 \times 7$.

$$\begin{array}{r} 7 \\ \times\ 4 \\ \hline 28 \end{array} \quad \left.\begin{array}{l} \\ \\ \end{array}\right\} \text{factors} \quad \text{product}$$

(4b) Multiplication & Division are <u>inverse</u> operations

ex. $\begin{array}{r} 4 \\ \times\ 5 \\ \hline 20 \end{array}$ $\quad 5\overline{)20}^{\,4}$ or $4\overline{)20}^{\,5}$

$\frac{20}{5} = 4 \qquad \frac{20}{4} = 5$

$20 \div 5 = 4 \qquad 20 \div 4 = 5$

Divided - 20
Divisor - 5 $= 4$ - Quotient

(4c) <u>Algorithm</u> means a way to do something.

Lesson 5: Addition & Subtraction word problems

A word problem that makes you think "some and then some more" means you have an addition pattern.
If you think "some went away", the pattern is a subtraction pattern.
"How much greater" and "how much less" also indicate a subtraction pattern.

Lesson 6 Notes: Decimal Numbers

The decimal ~~number~~ Point in a whole number is understood to be at the right: 976.

A decimal number is a number that has a decimal point somewhere in the middle: 32.41

etc.	etc.	ten thous.	thous.	hundreds	tens	units	•	tenths	hundredths	thousandths	ten thous...ths	etc.	etc.

6B When inserting commas into decimal numbers, you begin at the right (just like whole numbers) and count three spaces left:

$$16{,}934{,}509 \cdot 3{,}834{,}567$$

(3 2 1 | 3 2 1 | 3 2 1 | 3 2 1)

When reading a decimal number, the decimal point is read "AND". (ex: 6.3 is six and three tenths) Commas are inserted where needed.

6C When adding & subtracting decimal numbers, the decimal points must be aligned.

6D We don't align decimal points when multiplying. We add decimal numbers in both factors and move the decimal point an equal number of spaces in the product. (ex: 4.12 – 2 spaces; 63.2 – 1 space } = 3 spaces

$$\begin{array}{r} 4.12 \\ \times\ 63.2 \\ \hline 824 \\ 1236 \\ 2472 \\ \hline 260.384 \end{array}$$

— move 3 spaces

Lesson 7 Notes: Multiplying, Dividing By Powers of TEN

When we multiply by power of 10, we simply move the decimal point to the right a number of spaces equal to the number of zero's in the power of ten.

36.942 × 100 — move decimal right 2 places

3694.2

When we divide by powers of 10, we simply move the decimal point to the left a number of spaces equal to the zeros in the power of ten

36.942 ÷ 100 — move decimal left 2 places

.36942

Lesson 8: Dividing, ordering and rounding decimal numbers.

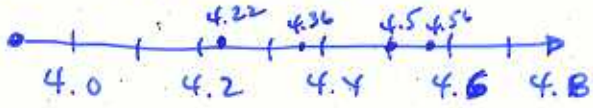
(A): Dividing Decimal numbers

(A) make the divisor a whole number by moving decimal point to right.
(B) move decimal in dividend an equal number of spaces to right.
(C) move decimal up over division bar

ex: $1.32\overline{)96.67}$ (2 spaces right for both)

(B) Ordering Decimal Numbers

Using a number ray decimal numbers can be graphed. (graph: 4.22, 4.36, 4.5, 4.54)



(C) Rounding Decimal Numbers

You use the same procedure to round decimal numbers as you do whole numbers.

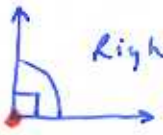
ex: Round to nearest hundredth

$3.5\underset{\downarrow}{6}734$
3.57

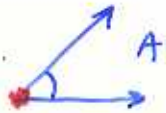
Lesson 9 Notes: Points, Lines, & Rays · Angles · Perimeter

(9A) Any two points can name a line. $\overleftrightarrow{AB}$ indicates a line. The above is "line AB". A bar with no arrow points is a line segment. $\overline{AB}$ is line segment AB. A ray begin at one point and is without end at the other point. $\overrightarrow{AB}$ is a ray.

(9B) An angle is the intersection of two rays. The vertex is the point the rays intersect.



Right Angle (RAYS ARE perpendicular)



Acute Angle (smaller than 90°)

straight angle (angle is 180°)

obtuse Angle (Angle more than 90°)

(9C) Perimeter is the distance around an object

Lesson 10 Notes

A divisor must be a whole number.
It helps to know the divisors of a number.
There are rules to help using some numbers

① A whole number is divisible by 2 if its last digit is 0, 2, 4, 6, 8
② " " " " " " 10 if " " " is 0
③ " " " " " " 5 if " " " is 5 or 0
④ " " " " " " 3 if the sum of it digits is divisible by 3
⑤ " " " " " " 9 if the sum of its digits is divisible by 9