

Lesson 1

Sequences

Arithmetic with whole numbers and money

Variables and Evaluation

Sequences

- Discover patterns to make predictions

Groups	1	2	3	4	5	6	7
Dots	1	3	6	10	15	21	28
Difference		+2	+3	+4	+5	+6	+7

$$a_n = (a_{n-1}) + n \text{ (not required)}$$

Whole numbers

- Natural numbers- $\{1,2,3,4,\dots\}$
- Whole numbers- $\{0,1,2,3,4,\dots\}$
- no negative numbers


Operations of Arithmetic

- $+, -, *, \div$
- Called operators

Using \$ and ¢

- fifty cents = \$.50 or 50¢
- .50¢ = one half of a cent

Addition

- addend + addend = sum
 - 1 + 2 = 3
- 
- The diagram consists of three arrows pointing from the second equation to the first. The first arrow starts under the '1' in '1 + 2 = 3' and points to the first 'addend' in 'addend + addend = sum'. The second arrow starts under the '2' in '1 + 2 = 3' and points to the second 'addend' in 'addend + addend = sum'. The third arrow starts under the '3' in '1 + 2 = 3' and points to the 'sum' in 'addend + addend = sum'.

Subtraction

- minuend - subtrahend = difference
- $2 - 1 = 1$

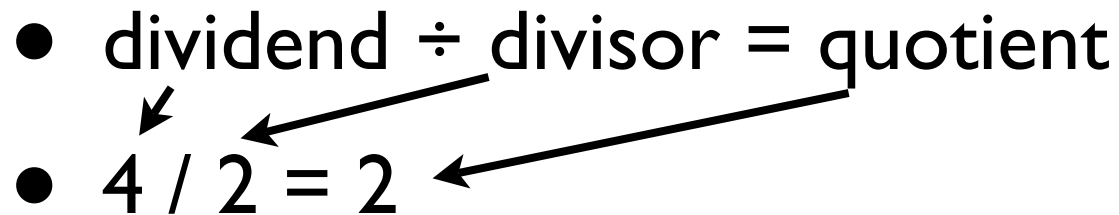
Multiplication

- Factor * Factor = Product
- $2 * 2 = 4$
- or $2(2) = 4$
- or $a * b, ab, a(b)$



All of these are the same.

Division

- dividend \div divisor = quotient
 - 4 / 2 = 2
- 

$$\frac{\text{dividend}}{\text{divisor}} = \text{quotient}$$

Variables

- Use letters to represent numbers that may change

Evaluate an expression

Review

$$\begin{array}{r} \overset{6}{7}28 \text{ Subtrahend} \\ - 51 \text{ Minuend} \\ \hline 677 \text{ Difference} \end{array}$$

$$\begin{array}{r} 1 \leftarrow \text{addend} \\ + 2 \leftarrow \text{addend} \\ \hline 3 \leftarrow \text{sum} \end{array}$$

2 Factor
x2 Factor
4 Product

$$\begin{array}{r} \text{quotient} \rightarrow 5 \\ \text{divisor} \rightarrow 3 \overline{)16} \\ \text{dividend} \nearrow 15 \\ \hline \text{remainder} \rightarrow 1 \end{array}$$

Review

- $+, -, /, \times$ are operators
- addend + addend = sum
- minuend - subtrahend = difference
- factor * factor = product
- dividend \div divisor = quotient
- Variables: represent numbers that change
- Evaluate an expression = find the numbers

Review