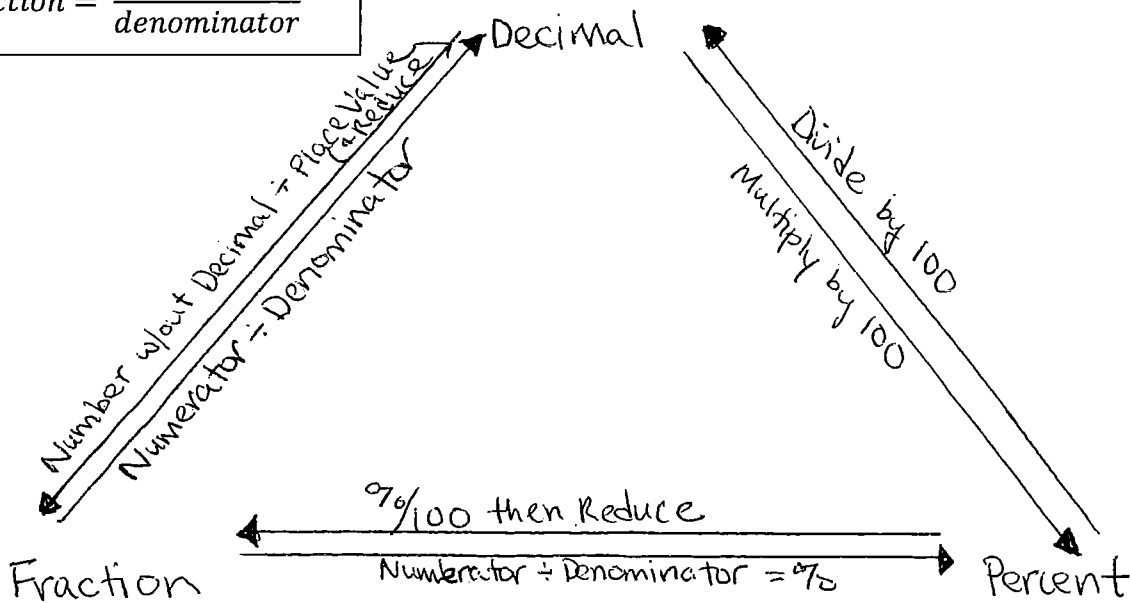


Number Sense Cheat Sheet

Fraction to Decimal to Percent Conversions

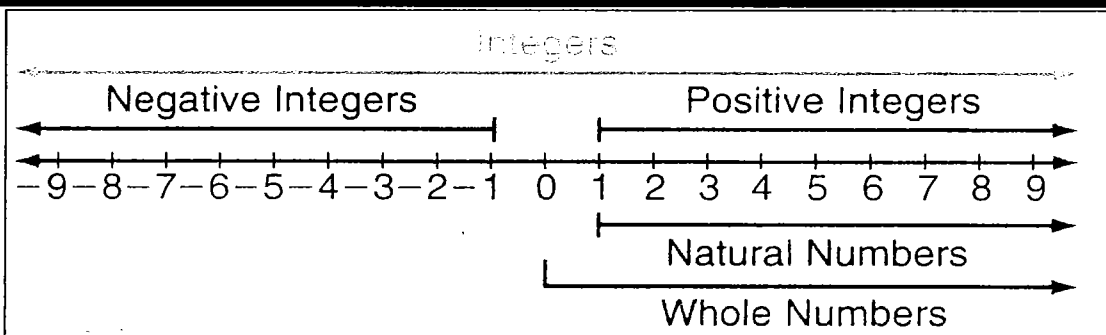
$$\text{fraction} = \frac{\text{numerator}}{\text{denominator}}$$



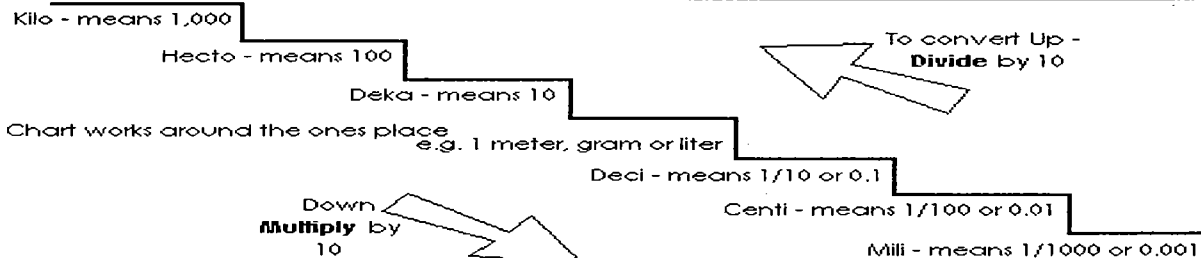
Place Value

1	2	3	4	5	6	7	.	8	9	0	1
millions	hundred-thousands	ten-thousands	thousands	hundreds	tens	ones		tenths	hundredths	thousandths	ten-thousandths

Number Sets

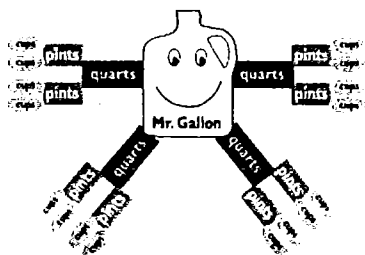


Metric Conversions



King Henry Danced Until Dawn Counting Money

Measurement Conversions



1 foot (ft) = 12 inches (in)
 1 yard (yd) = 3 feet (ft)
 1 yard (yd) = 36 inches (in)
 1 mile (mi) = 1,760 yards (yd)
 1 mile (mi) = 5,280 feet (ft)

Exponents

3^4
 base 3, exponent 4
 Exponent tells how many times to multiply the base by itself.
 $(3 \times 3 \times 3 \times 3)$

Scientific Notation

- Standard Notation - $93,000,000 \rightarrow$
 $93,000,000 \rightarrow$
 - Scientific Notation - 9.3×10^7
 - Standard Notation - $93,000,000$

Inverse Operations

*Inverse operations are operations that undo each other.

Addition and Subtraction	$5 + 3 = 8$	$8 - 3 = 5$
Multiplication and Division	$8 \times 2 = 16$	$16 \div 2 = 8$
Squares and Square Roots	$4^2 = 16$	$\sqrt{16} = 4$

Keys to Fraction Operations

Adding Fractions	Find common denominators (find a common multiple of the denominators to use as a new denominator)	$\frac{1}{3} + \frac{1}{2} = \frac{1}{3} + \frac{2}{6} + \frac{1}{2} = \frac{3}{6} + \frac{2}{6} = \frac{5}{6}$
Subtracting Fractions		
Multiplying Fractions	Multiply straight across - multiply the numerators and then multiply the denominators	$\frac{3}{4} \times \frac{1}{2} = \frac{3 \cdot 1}{4 \cdot 2} = \frac{3}{8}$
Dividing Fractions	Keep [the first fraction the same], Change [the division sign to multiplication], Flip [the second fraction] and then carry out the rest	$\frac{3}{4} \div \frac{1}{2} = \frac{3}{4} \times \frac{2}{1} = \frac{3 \cdot 2}{4 \cdot 1} = \frac{6}{4} = \frac{3}{2}$

Integer Operations

Order of Operations

Addition/ Subtraction	Using a Number Line... $32 \oplus$ Direction (-57) Start $(-)$ Flip \rightarrow How many Direction many	P Parentheses and Grouping Symbols	E Exponents	M D	A S
				Multiplication or Division	Addition or Subtraction
Multiplication	Positive and Positive = Positive	P	$(2 \times 3) - 2^2 \div 4$	Choose operation based on order from right to left	
Division	Positive and Negative = Negative	E	$6 - 2^2 \div 4$		
	Negative and Positive = Negative	M D	$6 - 4 \div 4$		
	Negative and Negative = Positive	A S	$6 - 1 = 5$		

Prime Numbers

*Any number that has the factors of 1 and itself.

1, 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 39, 41, 43, 47, 53, 59, 61, 67, 71, 73

Greatest Common Factor (GCF)

Least Common Multiple (LCM)

Factor	Write out all of the factor pairs for both numbers 20: $1 \times 20, 2 \times 10, 4 \times 5$ 30: $1 \times 30, 2 \times 15, 3 \times 30, 5 \times 6$	Multiple	Write out several of the multiples for each number 5: 5, 10, 15, 20, 25, 30, 35, 40 4: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40
Common	Circle all of the numbers they have in common 20: $1 \times 20, 2 \times 10, 4 \times 5$ 30: $1 \times 30, 2 \times 15, 3 \times 10, 5 \times 6$	Common	Circle all of the numbers they have in common 5: 5, 10, 15, 20 , 25, 30, 35, 40 4: 4, 8, 12, 16, 20 , 24, 28, 32, 36, 40
Greatest	Choose the greatest number they have in common - this is your Great Common Factor = 10	Least	Choose the smallest number they have in common - this is your Least Common Multiple = 20