*5th Grade Review*

# 2019 WCS Summer Math Packet


"Most students lose about two months of grade level equivalency in mathematical computation skills over the summer months" (Cooper & Nye, 1996)

**Mr. Stahlheber**
**RTI Coordinator**
**dstahlheber@windhamsd.org**

**Mrs. Coish**
**RTI Tutor**
**mcoish@windhamsd.org**

5th Grade Topic Overview:

Topic 1 – Understand Place Value

Topic 2 – Add & Subtract Decimals to Hundredths

Topic 3 – Multiply Multi-Digit Whole Numbers

Topic 4 – Multiply Decimals

Topic 5 – Dividing Whole Numbers

Topic 6 – Dividing Decimals

Topic 7 – Add & Subtract Fractions

Topic 8 – Multiplying Fractions

Topic 9 – Dividing Fractions

Topic 10 – Volume

Topic 11 – Convert Customary & Metric Measurements

Topic 12 – Represent & Interpret Data **(Skipped due to time constraints)**

Topic 13 – Order of Operations (PEMDAS)

Topic 14 – Graphing on a Coordinate Plane

Topic 15 – Patterns **(Skipped due to time constraints)**

Topic 16 – Classifying Triangles & Properties of Quadrilaterals

# Topic 1

## Exponents

- $10^0 = 1$
- $10^1 = 10$
- $10^2 = 100$
- $10^3 = 1{,}000$

## Student Work

- $5 \times 10^3 =$
- $10^5 \times 2 =$
- $9 \times 10^1 =$

## Place Value

- $85\underline{6},923$

  Place = Ten thousands

  Value = 50,000

- $1\underline{7},432,890$

  Place =

  Value =

## Comparing Decimals

- $9.327 \textcircled{>} 9.238$
- $0.584 \bigcirc 0.58$
- $5.20 \bigcirc 5.2$

## Rounding Decimals

- $0.1\underline{4}5 = 0.15$
- $3{,}999 = 4$
- $7\underline{3}.4 =$
- $45.\underline{3}98 =$

# Topic 2

## Adding Decimals

- $8.6 + 23.4 + 1.4 = 33.4$

$$\begin{array}{r} {\scriptstyle 1\ 1} \\ 23.4 \\ 8.6 \\ 1.4 \\ \hline 33.4 \end{array}$$

* line up your decimals

- $27 + 9.9 = 36.9$

$$\begin{array}{r} {\scriptstyle 1} \\ 27.0 \\ +\ 9.9 \\ \hline 36.9 \end{array}$$

## Student Work

- $98 + 3.79 =$
- $7.6 + 0.85$

## Subtracting Decimals

- $15.01 - 4.2 =$

$$\begin{array}{r} {\scriptstyle 4\ 10} \\ 15.01 \\ -\ 4.20 \\ \hline 10.81 \end{array}$$

* line up your decimals

- $24.07 - 5.361 = 18.709$

$$\begin{array}{r} {\scriptstyle 1\ 13\ 10\ 6\ 10} \\ 24.0710 \\ -\ 5.361 \\ \hline 18.709 \end{array}$$

- $51.92 - 28.003$
- $89 - 53.13 =$

# Topic 3

## Multiplying with Exponents

- $10^2 \times 39 = 3{,}900$
  $100 \times 39 = 3{,}900$
- $3 \times 10^5 = 300{,}000$
  $3 \times 100{,}000 = 300{,}000$

## Student Work

- $10^4 \times 31 =$
- $6 \times 10^3 =$

## Multi-digit Multiplication

- $91 \times 59 = 5{,}369$

$$\begin{array}{r} 91 \\ \times\ 59 \\ \hline 819 \\ +\ 4550 \\ \hline 5{,}369 \end{array}$$

- $45 \times 806 = 36{,}270$

$$\begin{array}{r} 806 \\ \times\ 45 \\ \hline 4030 \\ +\ 32240 \\ \hline 36{,}270 \end{array}$$

- $82 \times 43 =$
- $524 \times 37 =$

## Multiplying with Zeros

- $815 \times 100 = 81{,}500$

* Basic Facts, add the Zeros

- $44 \times 10 =$
- $93 \times 100 =$

# Topic 4

## Multiplying Decimals

- $1.3 \times 0.4 = 0.52$

$$\begin{array}{r} 1.3 \\ \times 0.4 \\ \hline 52 \\ +000 \\ \hline 0.52 \end{array}$$

① Multiply like normal

② Count the number of spaces from the right side to the decimal on both numbers

③ Place the decimal in the quotient from right to left that many spaces.

- $3.4 \times 3.6 = 12.24$

$$\begin{array}{r} 3.6 \\ \times 3.4 \\ \hline 144 \\ 1080 \\ \hline 12.24 \end{array}$$

Two spaces

Two spaces

## Student Work

- $5.8 \times 5.2 =$
- $11.2 \times 9.7 =$
- $52.3 \times 1.4 =$

# Topic 5

## Long Division with Zeros

- $360 \div 40 = 9$

$$\begin{array}{r} 9 \\ 40\overline{)360} \\ 36 \\ \hline 0 \end{array}$$

- $21{,}000 \div 30 = 700$

$$\begin{array}{r} 700 \\ 30\overline{)21{,}000} \\ -21 \\ \hline 00 \\ -0 \\ \hline 00 \\ -0 \\ \hline 0 \end{array}$$

## Student Work

- $350 \div 70 =$
- $72{,}000 \div 900 =$

## Long Division with 2-digits

- $25\overline{)1{,}352}$

$$\begin{array}{r} 54 \text{ R } 2 \\ 25\overline{)1{,}352} \\ -125 \\ \hline 102 \\ -100 \\ \hline 2 \end{array}$$

- $58\overline{)7211}$

$$\begin{array}{r} 124 \text{ R } 19 \\ 58\overline{)7211} \\ -58 \\ \hline 141 \\ -116 \\ \hline 251 \\ -232 \\ \hline 19 \end{array}$$

- $47\overline{)5{,}170}$
- $41\overline{)504}$

# Topic 6

## Dividing with Decimals

$64.82 \div 7 = 9.26$

$$
\begin{array}{r}
9.26 \\
7\overline{)64.82} \\
63 \\
\hline
18 \\
14 \\
\hline
42 \\
42 \\
\hline
0
\end{array}
$$

- $26.5 \div 5 = 5.3$

$$
\begin{array}{r}
5.3 \\
5\overline{)26.5} \\
25 \\
\hline
15 \\
15 \\
\hline
0
\end{array}
$$

## Student Work

- $22.56 \div 6 =$
- $29.04 \div 22 =$

# Topic 7

## Adding Fractions

- $\frac{1}{9} + \frac{5}{6} = \frac{17}{18}$

$\frac{1}{9} \rightarrow \frac{2}{18}$

$+ \frac{5}{6} \rightarrow \frac{15}{18}$

$\frac{17}{18}$

- $7\frac{3}{4} + 5\frac{1}{8} = 12\frac{7}{8}$

$7\frac{3}{4} \rightarrow 7\frac{6}{8}$

$+5\frac{1}{8} \rightarrow 5\frac{1}{8}$

$12\frac{7}{8}$

## Student Work

- $\frac{2}{5} + \frac{3}{10} =$

- $2\frac{1}{4} + 5\frac{11}{12} =$

## Subtracting Fractions

- $\frac{7}{8} - \frac{2}{3} = 6\frac{1}{3}$

$\frac{7}{8} \rightarrow \frac{21}{24}$

$- \frac{2}{3} \rightarrow \frac{16}{24}$

$\frac{5}{24}$

- $8\frac{5}{6} - 2\frac{1}{2} =$

$8\frac{5}{6} \rightarrow 8\frac{5}{6}$

$-2\frac{1}{2} \rightarrow 2\frac{3}{6}$

$6\frac{2}{6} = 6\frac{1}{3}$

## Student Work

- $\frac{3}{4} - \frac{5}{12} =$

- $9\frac{3}{7} - 6\frac{2}{5} =$

# Topic 8

## Multiplying Fractions

- $4 \times \frac{3}{4} = 3$

  $\frac{4}{1} \times \frac{3}{4} = \frac{12}{4} = 3$

- $5 \times \frac{5}{6} = 4\frac{1}{6}$

  $\frac{5}{1} \times \frac{5}{6} = \frac{25}{6} = 4\frac{1}{6}$

- $3 \times \frac{7}{8} = 2\frac{5}{8}$

  $\frac{3}{1} \times \frac{7}{8} = \frac{21}{8} = 2\frac{5}{8}$

## Student Work

- $9 \times \frac{2}{3} =$
- $12 \times \frac{2}{3} =$
- $8 \times \frac{5}{6} =$

## Convert Mixed Numbers to Improper Fractions

- $\frac{21}{5} = 4\frac{1}{5}$

  $5\overline{)21}$ $4\frac{1}{5}$

  $\frac{20}{1}$

- $\frac{30}{9} = 3\frac{3}{9} = 3\frac{1}{3}$

  $9\overline{)30}$ $3\frac{3}{9}$

  $\frac{27}{3}$

- $\frac{12}{3} = 4$

  $3\overline{)12}$ $4$

- $\frac{27}{9} =$
- $\frac{17}{4} =$
- $\frac{35}{10} =$

# Topic 8 con't.

## "Fraction of" problems

- $\frac{3}{4}$ of 16 = 12

- $\frac{4}{7}$ of 28 = 16

* Hint: Multiply the whole number by the fraction

- $\frac{3}{4} \times 16$

$\frac{3}{4} \times \frac{16}{1} = \frac{48}{4} = 12$

$4\overline{)48}$ → 12

- $\frac{4}{7} \times \frac{28}{1} = 16$

$\frac{112}{7}$ → 16

$7\overline{)112}$

7

42

42

## Student Work

- $\frac{3}{5}$ of 25 =

- $\frac{1}{4}$ of 32 =

# Topic 9

## Division of Expressions

- $\frac{7}{9} = 7 \div 9$
- $\frac{23}{7} = 23 \div 7$
- $\frac{17}{7} = 17 \div 7$

## Student Work

- $\frac{11}{17} =$
- $\frac{10}{3} =$
- $\frac{5}{9} =$

## Dividing with Fractions

- $\frac{1}{3} \div 2 = \frac{1}{6}$

  $\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$
- $7 \div \frac{1}{2} = 14$

  $\frac{7}{1} \times \frac{2}{1} = \frac{14}{1}$
- $25 \div \frac{1}{6} = 150$

  $\frac{25}{1} \times \frac{6}{1} = \frac{150}{1}$

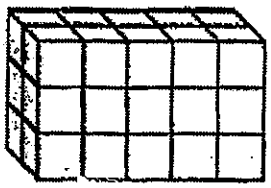
*Hint: Same, change, flip!

- $14 \div \frac{1}{2} =$
- $\frac{1}{5} \div 25 =$
- $36 \div \frac{1}{3} =$

# Topic 10

## Volume of Regular Shapes

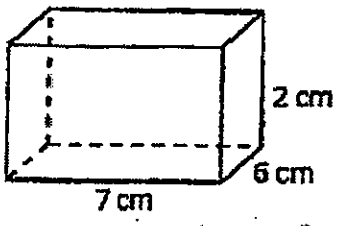
c



$V = 30 \text{ units}^3$

$V = 5 \times 2 \times 3 = 30 \text{ units}^3$

d



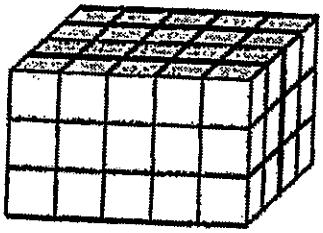

$V = 84 \text{cm}^3$

$V = 7 \times 6 \times 2 = 84 \text{ cm}^3$

## Student Work

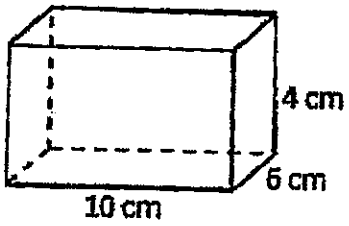
*Hint: $V = L \times W \times H$

b



$V =$

f

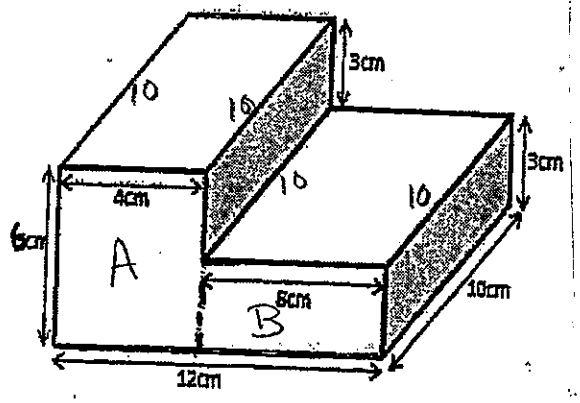



$V =$

## Volume of Irregular Shapes

*Hint: Make into 2 Regular shapes and add them.

e

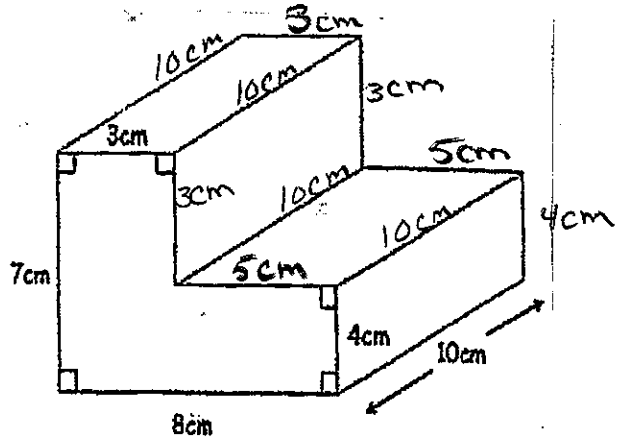



$A = 4 \times 10 \times 6 = 240$

$B = 8 \times 10 \times 3 = 240$

$V = 240 + 240 = 480 \text{ cm}^3$

g




$V =$

See Page A

Topic 11

# Customary Conversions

## Customary Units of Capacity

1 cup (c) = 8 fluid ounces (fl oz)
1 pint (pt) = 2 cups
1 quart (qt) = 2 pints
1 gallon (gal) = 4 quarts

- 6pt = 12 c
  6 × 2 = 12
- 36 c = 2 1/4 gal
  36 ÷ 16 = 2 1/4

## Customary Units of Length

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)

- 7ft = 84 in
  7 × 12 = 84
- 5 2/3 yds = 21 ft
  5 × 3 = 15
  2/3 × 3 = 6
  15 + 6 = 21

## Customary Units of Weight

1 pound (lb) = 16 ounces (oz)
1 ton (T) = 2,000 pounds

- 4,000 lb = 2 T
  4,000 ÷ 2,000 = 2
- 1/4 T = 500 lbs
  1/4 × 2,000 = 500

# Student Work

- 5qt = ____ pt
- 15gal = ____ qt.
- 9 yds = ____ ft
- 1 1/2 mi = ____ ft
- 7 T = ____ lbs
- 32 oz = ____ lbs

Topic 11 Con't,

# See Page B

# Metric Conversions

K|H|D|u|D|c|m

## Length

- 5.4m = 540 cm
  K H D u D c m
  5 4 0
- 0.02Km = 20 m
  K H D u D c m
  0 0 2 0

## Capacity

- 6L = 6000 mL
  K H D u D C M
  6 0 0 0
- 900mL = 0.9 L
  K H D u D C M
  0 9 0 0

## Mass

- 30 Kg = 30,000 g
  K H D u D C M
  3 0 0 0 0
- 0.17g = 170 mg
  K H D u D C M
  0 1 7 0

# Student Work

- 2.7Km = _____ m
- 7,435m = _____ Km
- 2,000mL = _____ L
- 0.15L = _____ mL
- 560g = _____ Kg
- 5,87g = _____ mg

* Skip Topic 12

# Topic 13

* See Page C

## Order of Operations

1. Groupings
2. Exponents
3. Multiplication / Division
4. Addition / subtraction

- $(78+47)\div 25 = 5$

  $125 \div 25$

  $5$

- $4+8\times 6\div 2+3 = 31$

  $4+48\div 2+3$

  $4+24+3$

  $28+3$

  $31$

- $[(8\times 25)\div 5]+120 = 160$

  $[200\div 5]+120$

  $40+120$

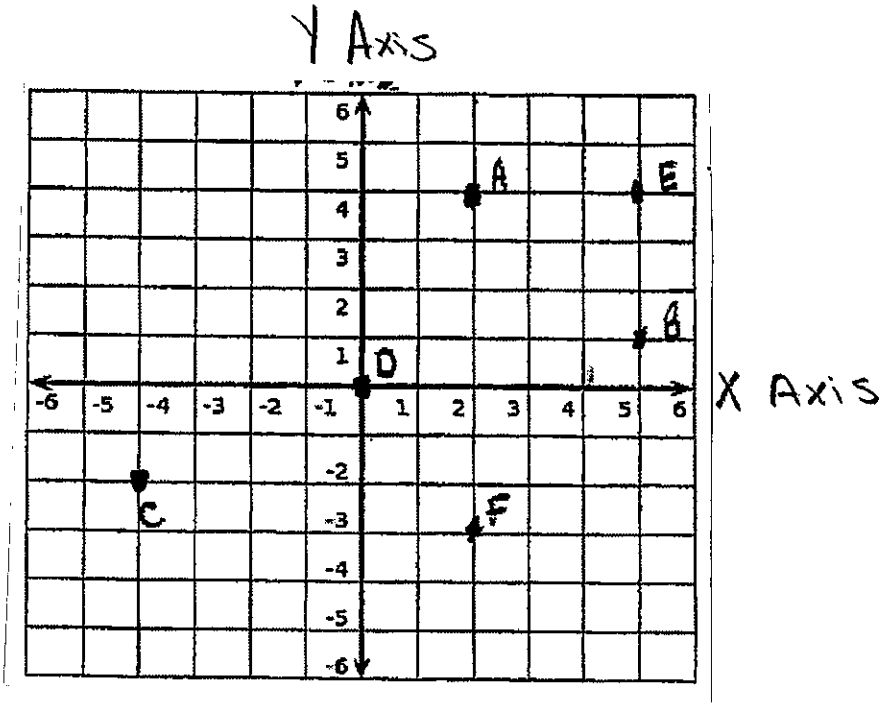
  $160$

## Student Work

- $(18-3)\div 5+4 =$
- $8\times 5+7\times 3-(10-5) =$
- $22-\{[(87-32)\div 5]\times 2\} =$

# Topic 14 (extension)

## Coordinate Grid




## Ordered Pairs

A: (2, 4)

B: (  ,  )

C: (  ,  )

D: (  ,  )

E: (  ,  )

F: (  ,  )

*Skip Topic 15

# Topic 16

*See Page D

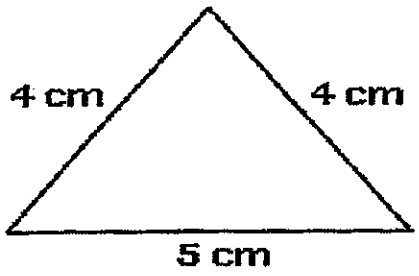



*Figure 1

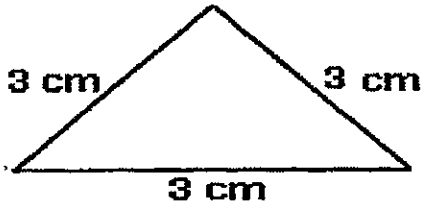



*Figure 2

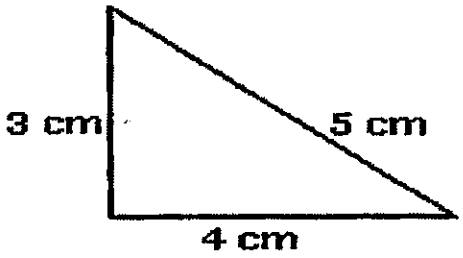



*Figure 3

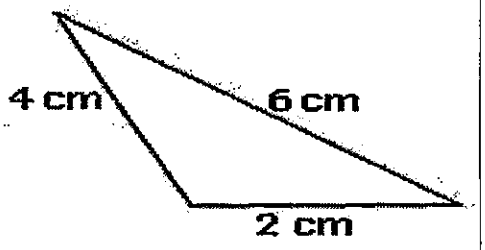



*Figure 4

## Name the Triangles

| | Sides | Angles |
|---|---|---|
| Figure 1: | _____ | _____ |
| Figure 2: | _____ | _____ |
| Figure 3: | _____ | _____ |
| Figure 4: | _____ | _____ |

Page A (Topic 11)

## Customary Units of Measurement

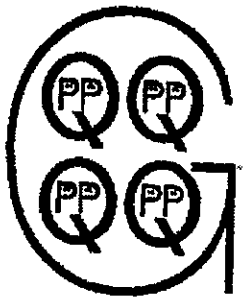
*"Snails Love Dessert"*
Any time we convert from a SMALLER unit to a LARGER unit we DIVIDE.
"Llamas Slurp Milk"
Anytime we convert from a LARGER unit to a SMALLER unit we MULTIPLY.

**Length:**

| |
|---|
| 1 foot (ft) = 12 inches (in.) |
| 1 yard (yd) = 3 ft = 36 in. |
| 1 mile (mi) = 1,760 yd = 5,280 ft |

**Capacity:**

| |
|---|
| 1 gallon = 4 quarts (qt) |
| 1 quart = 2 pints (pt) |
| 1 pint = 2 cups (c ) |
| 1 cup = 8 fluid ounces (fl oz) |

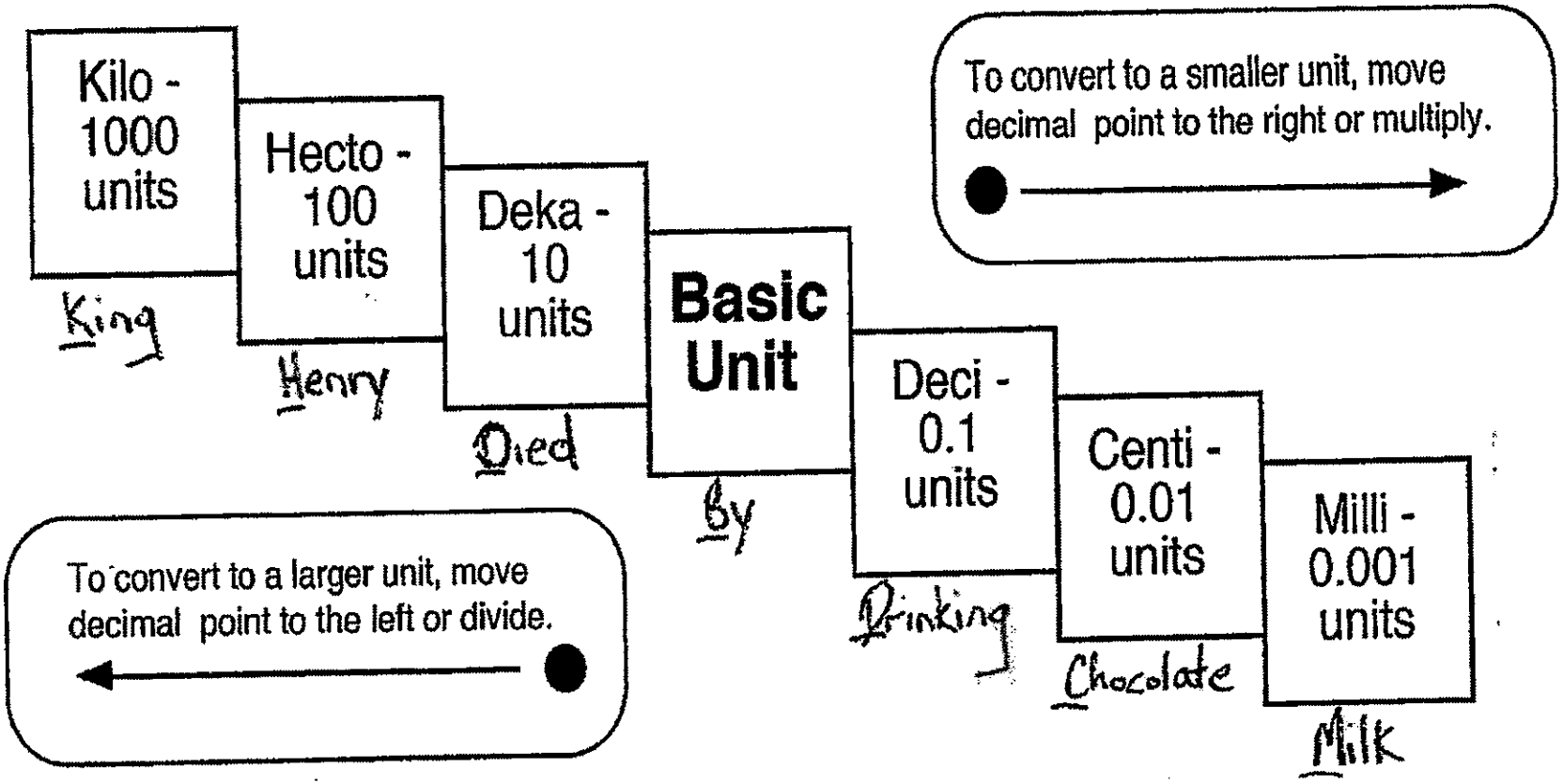



**Weight:**

| |
|---|
| 1 ton (T) = 2,000 pounds (lb) |
| 1 pound (lb) = 16 ounces (oz) |

A

# Metric Conversion Chart



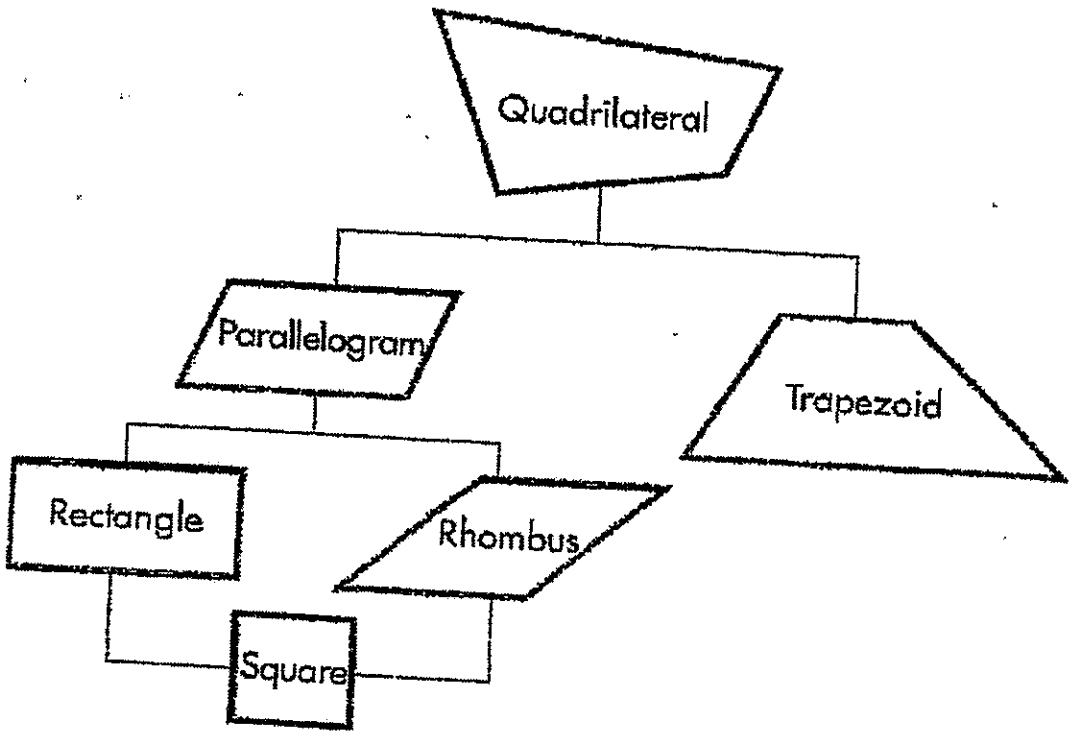

Page 13 (Topic 1)

## Order of Operations

**GEMDAS**

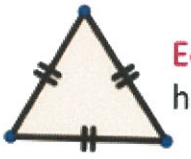
- **G**rouping
- **E**xponents
- **M**ultiplication
  **D**ivision
  (choose operation on left first)
- **A**ddition
  **S**ubtraction
  (choose operation on left first)

## Classifying Quadrilaterals

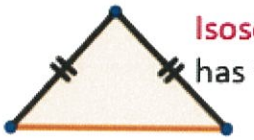


## Types of Triangles

### By Side



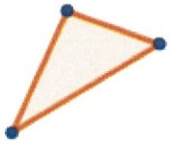
**Equilateral Triangle**
has three equal sides



**Isosceles Triangle**
has two equal sides

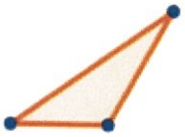
**Scalene Triangle**
has no equal sides

### By Angle



**Acute triangle**
has three angles < 90°

**Right triangle**
has one angle = 90°



**Obtuse triangle**
has one angle > 90°