



# 7<sup>th</sup> Grade PAP Math



## 1<sup>st</sup> Six Weeks

- Add, subtract, multiply & divide integers
- Add, subtract, multiply & divide positive & negative fractions
- Solve 1-step equations w/ rational numbers

## 2<sup>nd</sup> Six Weeks

- Solve 2-step & multi-step equations w/distributing & combining like terms
- Decide if a value is a solution to an equation
- Solve equations w/variables on both sides using rational number coefficients & constants
- Write a real world problem given an equation
- Find unit rates & solve conversions w/unit rate
- Solve problems using complex fractions
- Proportional & non-proportional relationships
- Graph proportional relationships
- Determine if a relationship is proportional
- Solve problems using proportions
- More conversions using proportions
- Find constant rate of change from graph/table
- Determine constant of proportionality/constant rate of change
- Square Roots
- Pythagorean Theorem

- Simple & compound probability
- Probability of Independent & dependent events
- Solve problems using a scale factor
- Solve problems w/ similar figures
- Determine circumference formula for circles
- Discover  $\pi$  is ratio of circumference/diameter
- Solve equations: angles/triangle; angle relationships
- Area of circles and composite figures
- Surface area of prisms, pyramids

## 5<sup>th</sup> Six Weeks

- Volume of prisms, pyramids, & cylinders
- Solve problems w/bar graphs, dot plots, and circle graphs
- Use random samples to make inferences
- Understand biased & unbiased samples
- Misleading graphs
- Analyze data using box plots
- Choose an appropriate graph
- Solve & write 2 step inequalities
- Represent linear relationships from words, tables, graphs & equations
- Find rate of change (slope)
- Write/interpret equations slope-intercept form

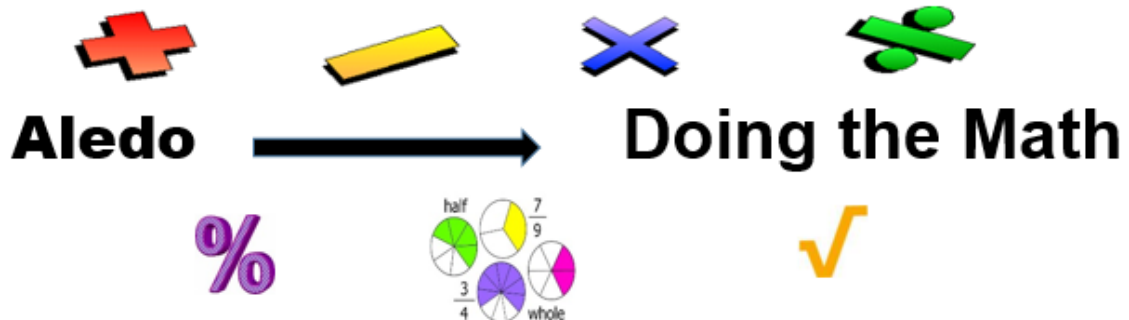
## 3<sup>rd</sup> Six Weeks

- Solve percent problems
- Estimating with percents
- Use the percent proportion to solve problems
- Use the percent equation to solve problems
- Find the percent of increase & decrease
- Find tax, tip, discount & markup
- Calculate simple interest
- Solve problems w/personal & family budgets
- Create net worth statement
- Compare simple & compound interest

## 6<sup>th</sup> Six Weeks

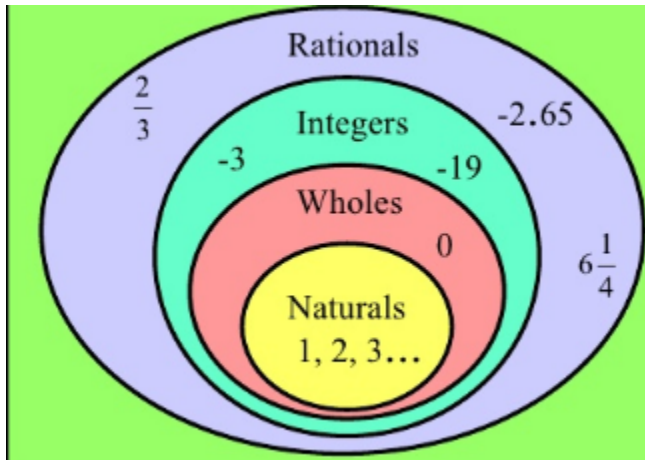
- Review for STAAR
- Translations, reflections & rotations over x & y axis of 2 dimensional shapes using algebraic representations
- Surface area of cylinders using nets and formulas
- Functions

## 4<sup>th</sup> Six Weeks



# 7<sup>th</sup> Grade Strategies

## Sets of Numbers:



## Representing a problem:

Shirt sold. You make \$6.30 profit for each T-

Words	Numbers								
_____ per T-shirt	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Profit (\$)</th> <th style="width: 50%;">Number of shirts</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">6.30</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">12.60</td> <td></td> </tr> <tr> <td style="text-align: center;">18.90</td> <td></td> </tr> </tbody> </table>	Profit (\$)	Number of shirts	6.30	1	12.60		18.90	
Profit (\$)	Number of shirts								
6.30	1								
12.60									
18.90									
Symbols	Graph								
Let $p$ = profit $r$ = number of T-shirts sold $p = \square r$									

## Properties

**Commutative Property - order**

$$5 + 7 = 7 + 5$$

**Identity Property -**

$$5 + 0 = 5$$

$$1 \times 8 = 8$$

**Zero Property of Multiplication -**

$$10 \times 0 = 0$$

$$81 + b^2 = 225$$

**Associative Property -**

$$(3 \times 7) \times 4 = 3 \times (7 \times 4)$$

**Distributive Property -**

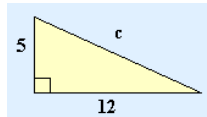
$$7 \times (5 + 2) = (7 \times 5) + (7 \times 2)$$

## Pythagorean Theorem

1. ONLY for right triangles

2. Finds a missing side

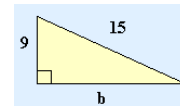
$$a^2 + b^2 = c^2$$



$$5^2 + 12^2 = c^2$$

$$25 + 144 = c^2$$

$$9^2 +$$



$$b^2 = 15^2$$

$$169 = c^2$$

$$\sqrt{169} = c$$

$$13 = c$$

$$-81 = -81$$

$$b^2 = 144$$

$$b = \sqrt{144}$$

$$b = 12$$

Time (min)	Calories
15	60
30	120
45	180
60	240

Proportional

Proportional

Constant Ratio:  $\frac{y}{x}$

$$\frac{60}{15} = \frac{120}{30} = \frac{240}{60} = 4$$

Input (days)	Output (\$)
1	15
2	20
4	30
6	40

Non-

$$\frac{15}{1} \neq \frac{20}{2} \neq \frac{40}{6}$$

**Slope - Intercept Form of Equation**  $y = mx + b$

**Percent Proportion**  $\frac{\textit{part}}{\textit{whole}} = \frac{\%}{100}$

For more information and activities: [www.math4texas.com](http://www.math4texas.com)