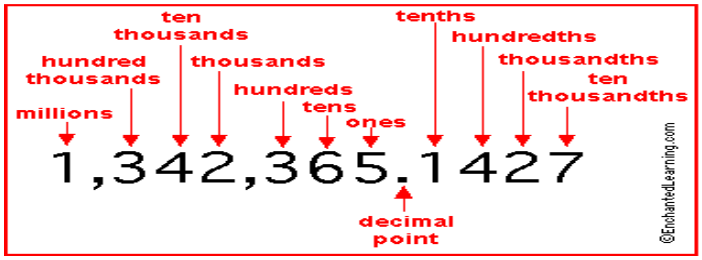
- **SOL 5.1**...***The student, given a decimal through thousandths, will round to the nearest whole number, tenth, or hundredth***

is



Find the place being rounded to, then look at the next digit to the right. If that digit is 0-4, give the rounding digit a rest. If the digit 5 or more, raise the score.

Ex. 5.689 rounded to the nearest tenth.

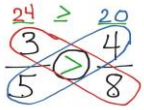
5.6***8***9→ the 8 tells the 6 to raise the score, so the correct answer would be **5.7**

- **SOL 5.2**...***The student will...a) recognize and name fractions in the equivalent decimal form and vice versa; and b) compare and order fractions and decimals in a given set from least to greatest and greatest to least.***

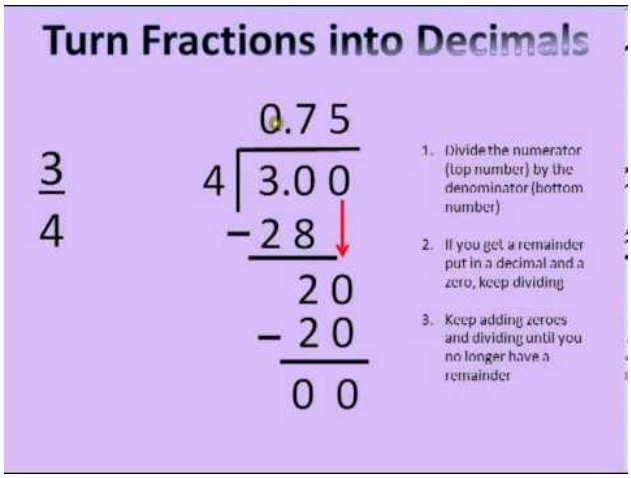
Common Fraction/Decimal Equivalents: ½ = 0.5, 1/3 = 0.33, 2/3 = 0.67, ¼ = 0.25, ¾ = 0.75, 1/5 = 0.20, 2/5 = 0.40, 3/5 = 0.60, 4/5 = 0.80, 1/8 = 0.125

Fractions with a denominator of 10, 100, 1000: Write what you say...i.e. 1/10 = 0.1, 1/100 = 0.01, 1/1000 = 0.001

Compare Fraction



Ordering Fractions



Change any fractions to decimals using division, then stack all the numbers, lining up the decimals. Make all decimal numbers have the same number of decimal places.

i.e... ½, 0.9, ¼, 0.125 from ***greatest to least***.

Change fractions to decimal as shown to the left and stack all the numbers. Then add zeros so all numbers have the same amount of decimal places.

0.50**0**

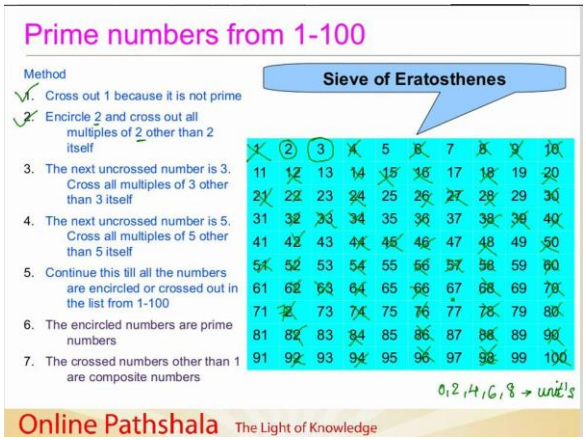
0.9**00**

0.25**0**

0.125

Answer: 0.9, ½, ¼, 0.125

- **SOL 5.3**...*The student will...a) identify and describe the characteristics of prime and composite numbers; and b) identify and describe the characteristics of even and odd numbers*



a) A prime number is a number that has exactly two factors; one and itself. i.e. 2...factors are 1 x 2. Composite numbers have three or more factors. i.e...9...factors are 1x9 and 3x3. Characteristics of prime and composite...the number one (1) is neither prime nor composite. The number two (2) is the only even prime number.

b) Even/Odd numbers.

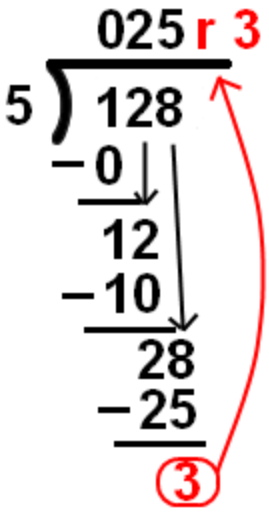
Even # + Even# = Even #	Even # x Even # = Even #
Even + Odd = Odd	Even x Odd = Even
Odd + Odd = Even	Odd x Odd = Odd

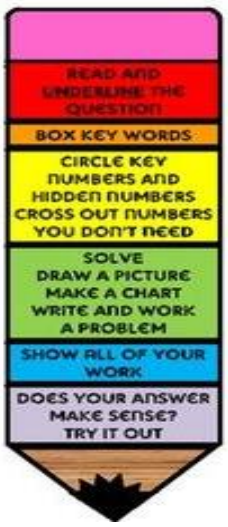
-

- **SOL 5.4**...***The student will create and solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division with and without remainders of whole numbers.***

  Steps of division...**D**oes **M**cDonalds **S**ell **C**heese **B**urgers

  D=Divide...M=Multiply...S=Subtract...C=Check...B=Bring down.





- **SOL 5.5**...***The student will...a)Find the sum, difference, product, and quotient of two numbers expressed as decimals through thousandths (divisors with only one nonzero digit); and b) create and solve single-step and multistep practical problems involving decimals***

Add/Subtract...

Solve these problems. Remember, its always a good idea to estimate your answer first.

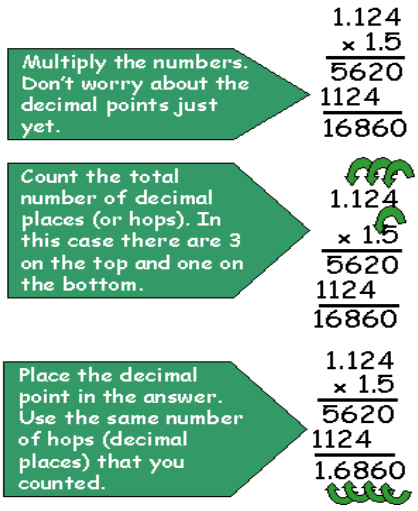
136.04 + 102.27 → 136.04 + 102.27 = 238.31 — Write in vertical column, aligning the decimal points.

Add each column, starting on right. Carry digits when needed.

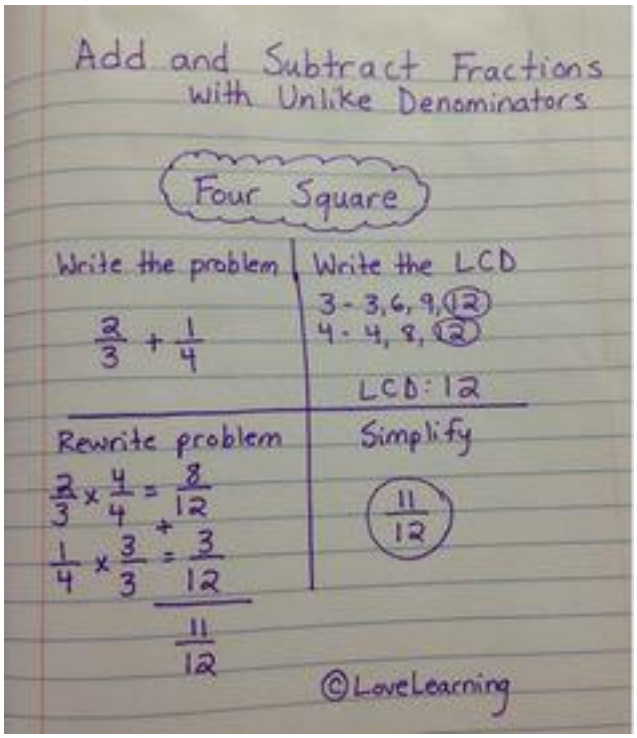
2.37 - 0.031 → 2.370 − 0.031 = 2.339 — Write in vertical column, aligning the decimal points.

Subtract each column, starting on right and working left. Borrow as needed.

Multiply...



- SOL 5.6...***The student will solve single-step and multistep practical problems involving addition and subtraction with fractions and mixed numbers and express answers in simplest form.***



$$4\frac{2}{3} + 2\frac{3}{4} \qquad 4\frac{8}{12} + 2\frac{9}{12}$$

$$6\frac{17}{12} = 6 + 1\frac{5}{12} = 7\frac{5}{12}$$

$$4\frac{2}{3} - 2\frac{3}{4} \rightarrow 4\frac{8}{12} - 2\frac{9}{12} \rightarrow 3 + 1\frac{8}{12} - 2\frac{9}{12} \rightarrow 3\frac{20}{12} - 2\frac{9}{12}$$

$$1\frac{11}{12}$$

- SOL 5.7...***The student will evaluate whole number numerical expressions, using the order of operations limited to parentheses, addition, subtraction, multiplication, and division.***
  PEMDAS...Please Excuse My (or) Dear Aunt (or) Sally
  P = Parentheses...M = Multiply...D = Divide...A = Addition...S = Subtraction
  (or)...Multiply OR Divide, whichever comes first from left to right. Same for addition OR subtraction.

Example:

24 – (12 / 4 x 3) + 7
24 – (3 x 3) + 7
24 – 9 + 7
15 + 7
22

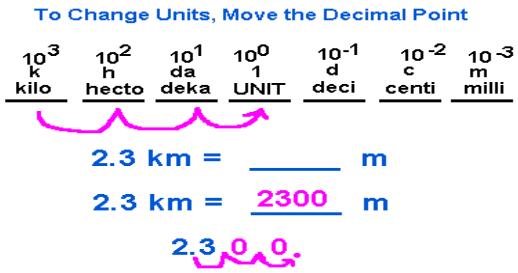
- **<u>SOL 5.8</u>**...***The student will...a) find perimeter, area, and volume in standard units of measure; b) differentiate among perimeter, area, and volume and identify whether the application of the concept of perimeter, area, or volume is appropriate for a given situation; c) identify equivalent measurements within the metric system; d) estimate and then measure to solve problems, using U.S. Customary and metric units; and e) choose an appropriate unit of measure for a given situation involving measurement using U.S. Customary and metric units***
  - **<u>Perimeter</u>**-Distance around a polygon; measured in units of length.
    Perimeter = Add ALL sides
  - **<u>Area</u>**- The amount of square units required to cover the inside of a figure.
    Area of Squares/Rectangles = Length x Width
    Area of Triangles = 0.5 x Base x Height
  - **<u>Volume</u>**- The amount of cubic units needed to fill an object (3D)
    Volume of Rectangular Prisms = Length x Width x Height
  - **<u>Key words for</u>:**

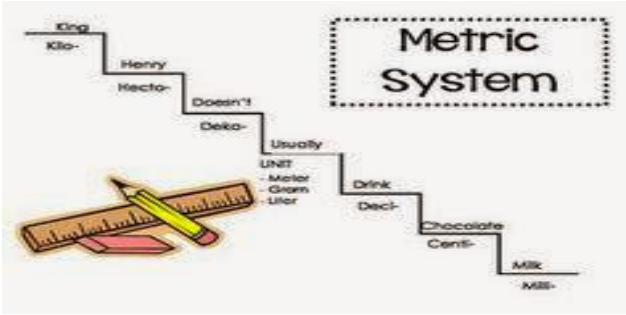
    Perimeter-Around, border, enclose, surround

    Area-Covers

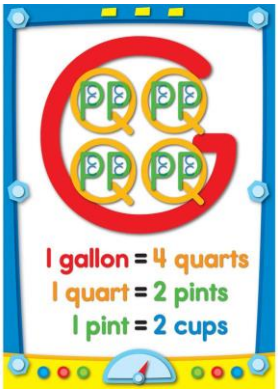
    Volume-Fills, holds

- **<u>Metric Conversions</u>**





Category	°F
• Freezing point of water	32°
• Boiling point of water	212°
• Human body temperature	98.6°

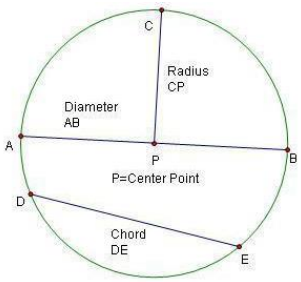


Length

12 inches = 1 foot

3 feet = 1 yard

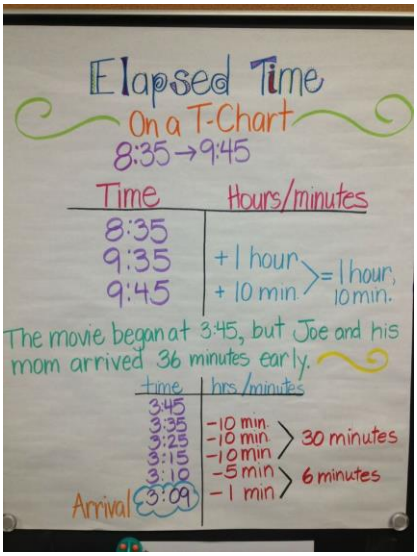
- **<u>SOL 5.9</u>**...***The student will identify and describe the diameter, radius, chord, and circumference of a circle.***



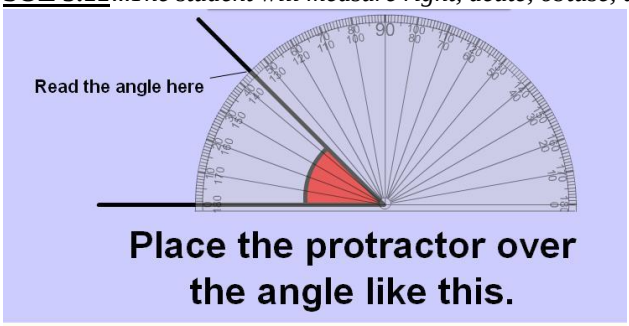
<u>Radius</u>-Line segment that touches the center point and one other point on the circumference.
<u>Diameter</u>-Line segment that touches the center point and two other points on the circumference. A diameter is ***always*** a chord because it touches two points on the circumference.
<u>Chord</u>-Line segment that touches two points on the circumference. Only certain chords are diameters because not every chord passes through the center point.
<u>Circumference</u>-The distance around a circle (similar to perimeter of polygons)

- It takes two radii (plural for radius) to make one diameter.
- One radius = ½ diameter

- **SOL 5.10**...*The student will determine an amount of elapsed time in hours and minutes within a 24-hour period.*
  - Always pay close attention to AM or PM on the both the beginning and ending times.
  - If you are given a start time and the number of hours/minutes elapsed, simply add the hours and minutes using the chart to the right.
  - If you are given the ending time and the number of hours/minutes elapsed, subtract the hours minutes using the chart to the right.

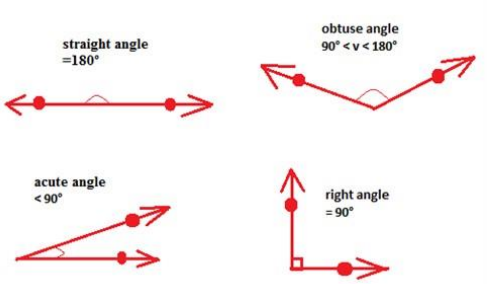


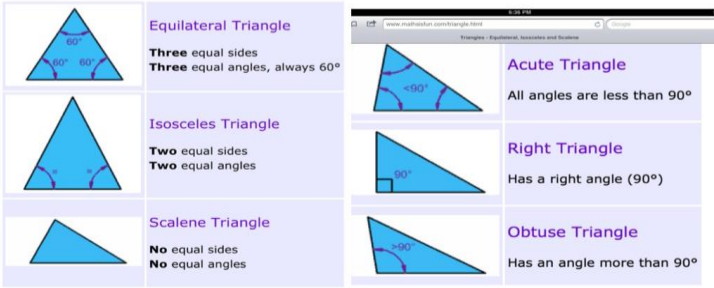
- **SOL 5.11**...*The student will measure right, acute, obtuse, and straight angles.*



To measure an angle, first classify it as acute, right, obtuse, or straight. Next, put vertex on vertex, then ray on ray, then look at the 2nd ray that should be touching numbers on the protractor. If the ray is touching a number, write both down then choose the correct one based on your classification.
If the ray passes between the numbers, write both top numbers the ray is between and write both bottom numbers it is between. Choose the correct set to use based on your classification. Be sure your answer is between the two numbers!

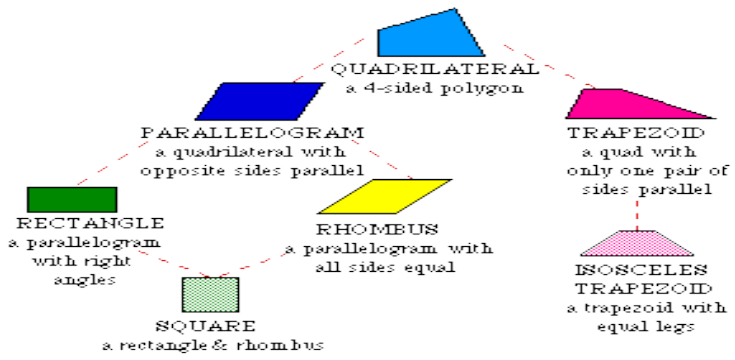
SOL 5.12...***The student will a) angles as right, acute, obtuse, or straight; and b) triangles as right, acute, obtuse, equilateral, scalene, or isosceles.***



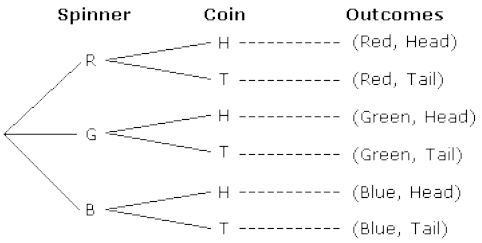


- **SOL 5.13**...***The student, using plane figures (square, rectangle, triangle, parallelogram, rhombus, and trapezoid), will a) develop definitions of these plane figures; and b) investigate and describe the results of combining and subdividing plane figures.***

Quadrilateral	*Properties*
Rectangle	4 right angles and opposite sides equal
Square	4 right angles and 4 equal sides
Parallelogram	Two pairs of parallel sides and opposite sides equal
Rhombus	Parallelogram with 4 equal sides
Trapezium	Two sides are parallel

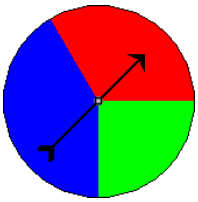


- **SOL 5.14**...***The student will make predictions and determine the probability of an outcome by constructing a sample space.***

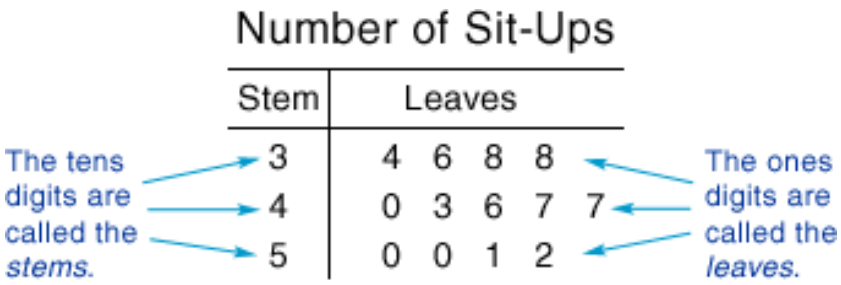


The tree diagram to the left shows an event including spinning a 3-colored spinner once and flipping a coin once. Under the heading "spinner" is listed all the possible colors (red, green, blue) the spinner can land on. Under the heading "coin" is listed all the possible sides (heads, tails) the coin could land with a given color from the spinner. The final heading is "outcomes." This is where all the outcomes from one spin and one flip are listed.

A quick way to find all the possible outcomes is to multiply all the outcomes from the spinner (3) with all the outcomes from the coin (2). 3 x 2 = 6 possible outcomes, which are all listed under outcomes heading.



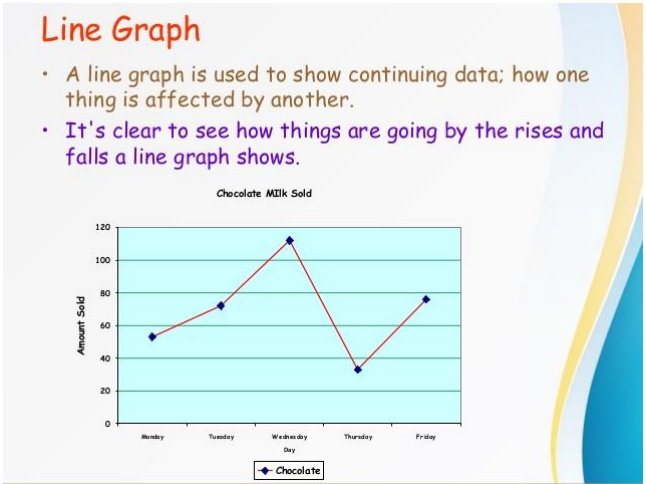
- **SOL 5.15**...***The student, given a problem situation, will collect, organize, and interpret data in a variety of forms, using stem-and-leaf plots and line graphs.***



Number of Sit-ups: 36, 40, 52, 46, 38, 47, 50, 34, 51, 47, 38, 50, 43

A stem-and-leaf chart organizes groups of numbers. To create a stem-and-leaf, first put the numbers in order from least to greatest. (34, 36, 38, 38, 40, 43, 46, 47, 47, 50, 50, 51, 52). For 5th grade, the stem will represent the 10's place and the leaf the 1's place. The first stem is determined by the 10's place in the least number (the 3 in 34). The last stem is determined by the 10's place in the greatest number (the 5 in 52). Next, fill in every number between 3 and 5. This completes the stem. For the leaves, simply put the 1's digit with the corresponding leaf. For example, the 4 in 34 will be the first leaf by the stem of 3. To be certain all numbers are represented on the plot, the number of leaves should equal the amount of numbers from the original data set.

*****In this example, if there were no number of sit-ups in the 40's, there would be <u>no</u> leaf by the 4. If a 0 was written, that would mean the number 40 was included in the set.***

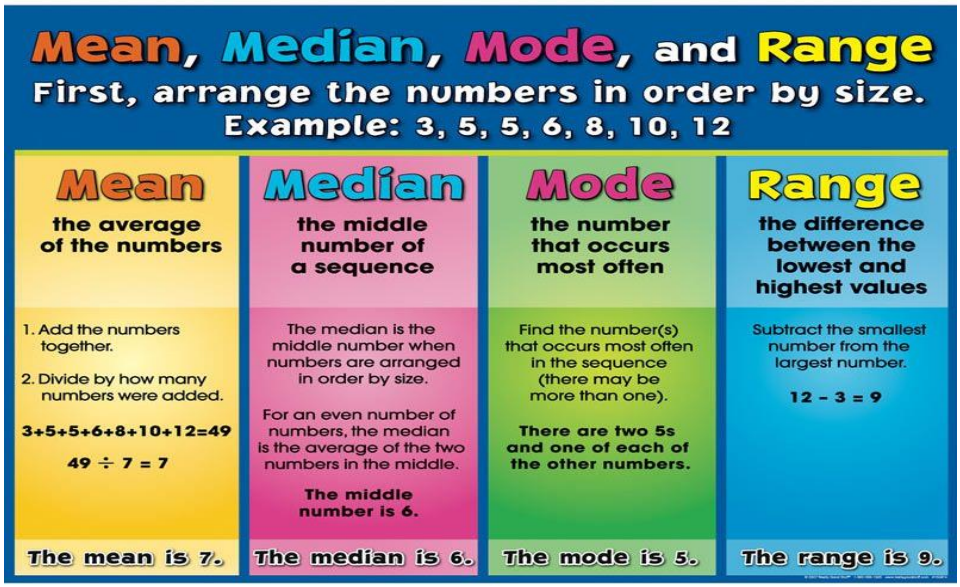


<u>LINE GRAPHS</u>

A line graph is used to show change over time. A graph must contain the following parts:

- A main title telling what the graph is about
- Information on both the x and y-axis.
- A title on both the x and y-axis telling what the information is about.
- A proper interval (what you are counting by). The interval must be maintained on the entire graph.
- **<u>Trend</u>**-What is happening to the data on the graph.
  -

- **SOL 5.16**...***The student will a)describe mean, median, and mode as measures of center; b) describe mean as a fair share; c) find the mean, median, mode, and range of a set of data; and d) describe the range of a set of data as a measure of variation.***



Mean can also be referred to as the average or "fair share."
Range is also known as "a measure of variation."
Always remember to put the data in order!

- **SOL 5.17**...***The student will describe the relationship found in a number pattern and express the relationship.***

HOW TO FIND RULES OF A PATTERN

Rule 1: Is the pattern sequence increasing or decreasing.

Rule 2: Figure out what the pattern is? adding, subtracting, or multiply?

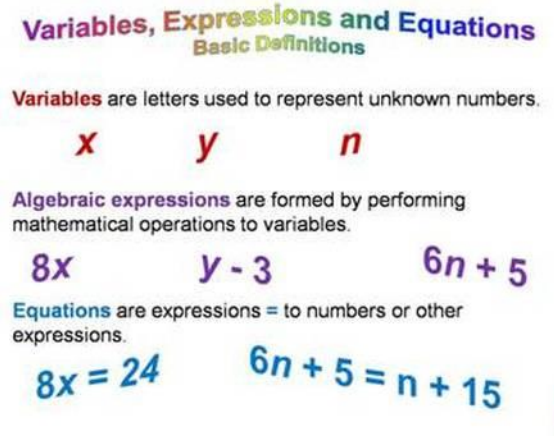
Rule 3: Identify the rule

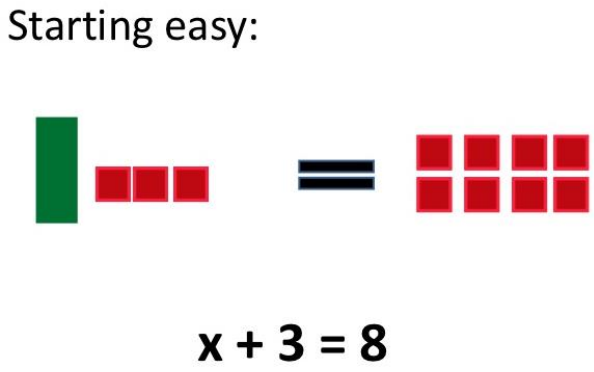
Find the rule and complete the table.

In	Out
2	12
	14
5	15
	16
9	19
10	20

Looking at the input/output table to the left, the input number must be increased to obtain the output. Try addition or multiplication. The rule is add 10 because that rule works on all the numbers. Therefore, the missing number is 4 and 6.

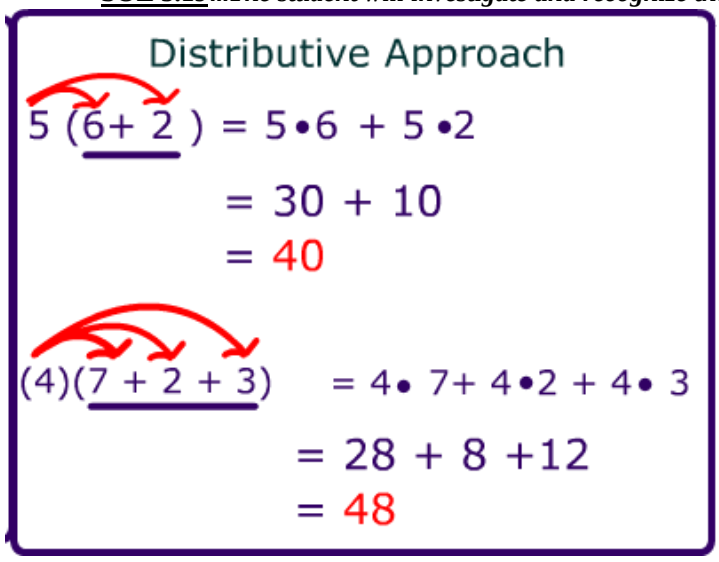
SOL 5.18...***The student will a) investigate and describe the concept of a variable; b) write an open sentence to represent a given mathematical relationship, using a variable; c) model one-step linear equations in one variable, using addition and subtraction; and d) create a problem situation based on a given open sentence, using a single variable.***





In the model above, the green tile represents the variable (a letter/symbol for an unknown value) and each red tile equals one. A problem situation: *I have some baseball cards. My friend gives me three more cards. I now have eight cards.* In this situation, the problem does not state how many cards I originally have. This would represent the unknown, which would be our variable, x. My friend gives me three more cards, which means I would add three to the number of cards I had to begin with.

- **SOL 5.19**...***The student will investigate and recognize the distributive property of multiplication over addition.***



The distributive property:
Multiply the number outside the parentheses with each number on the inside, keeping the addition sign in the middle.