**GCF AND LCM**

* **Greatest Common Factor (GCF):** the largest number that will go in two or more given #s Ex. 12, 24, 60 GCF = 12
* **Least Common Multiple (LCM):** the smallest multiple that two or more numbers have in common Ex. 4, 6, 16 = 48. LCM is also used in finding the least common denominator with fractions.

**PRIME & COMPOSITE NUMBERS**

* **Prime:** one set of factors, 2 is the only even prime #
* **Composite:** more than 2 factors

**6TH GRADE
MATH EOG**

**PERCENTS**

If you have all the percents (whole) it will be **100%**.

* **Decimal to %:** decimal \* 100 (move deci. 2 to 🡪)
* **% to Decimal:** % ÷ by 100 (move deci. 2 to 🡨)
* **Fraction to %:** top # ÷ bottom # \*100
* **% to Fraction:** turn % to decimal then decimal to fraction (see ratio fraction decimal box)

**MEASUREMENT (answers never cubed)**

* **Area of squares/rectangles**:

L x W

* **Area of triangle**: ½bh or bh÷2
* **Perimeter:** add all sides up
* **Area of circle**: πr2
* **Circumference:** 2πr or πd

**SOLVING TWO STEP EQUATIONS**

* Do the opposite to reverse the operation and work backwards with order of operations to get x by itself and what you do to one side you have to do to the other
* Example

 -2x + 3 = 15
 -3 -3
 -2x = 12
 -2 -2
 x = -6

**COORDINATE GRID**

* **Coordinates on a grid:** (x,y)
* **Origin:** (0,0)
 

**EXPONENTS**

* **Cubed:** third power
* **Squared:** second power
* 54 = 5 x 5 x 5 x 5

**TRANSFORMATIONS**

* **Reflection:** Flip
* **Rotation:** Turn
	+ Clockwise
	+ counterclockwise
* **Translation:** Slide

**ORDER OF OPERATIONS**

**Please:** Parentheses
**Excuse:** Exponents
**My:** Multiplication
**Dear:** Division
**Aunt:** Addition
**Sally:** Subtraction

* Treat multiplication and division as equals
* Treat addition and subtraction as equals
* Work left to right if you’ve got signs that are treated equally (Ex. If you got – before + do – first… L🡪R)

II

I

**SCIENTIFIC NOTATION**

* Always has times 10 to some power
* Only one number to left of decimal
* Negative exponents move 🡨 and positive move 🡪

IV

**ABSOLUTE VALUE EXAMPLES**

| 6 | = 6
| -4 | = 4

**RATIOS, FRACTIONS, & DECIMALS**

* **Ratio:** a way to represent a fraction using :
* **Fraction:** part over whole
* **Decimal:** another way to represent a fraction. Top # ÷ bottom # = decimal
* Example of ¾:
	+ Ratio**-**  **3:4**
	+ Fraction- **¾**
	+ Decimal- 3 ÷ 4 = **0.75**
* **Decimal to Fraction:** take the number after the decimal and put it over the place value (Ex. 0.625 🡪 $^{625}/\_{1000}$ because the 5 is in the thousandths place… now simplify… simplifies to 5/8)
* **Bar notation:** line that shows a decimal repeats

III

**PROPERTIES OF ADDITION AND MULTIPLICATION**

* **Distributive Property**:

“Distribute the papers” 🡪 3(x-4) = -18
3\*x + 3\*-4 = -18

* **Associative Property:** “Parentheses”
	+ 2(3y) = (2x3)y
	+ 2+(4+6) = (2+4)+6
* **Commutative Property:** “Mirrors” 🡪 5x4x3 = 3x4x5
* **Additive Identity Property:**4 + 0 = 4
* **Multiplicative Identity Property:** 9x1 =9

**ANGLES**

* **Acute:** less than 90o
* **Obtuse:** greater than 90o
* **Right:** 90o
* **Straight:** 180o
* **Complementary:** 2 angles that add up to 90o
* **Supplementary:** 2 angles that add up to 180o
* **Degrees in a shape:**
	+ Triangles: 180o
	+ Quadrilaterals (4 sided shapes): 360o
	+ Circle: 360o

**SUBSTITUTION**

* Put a number in place of a letter
* Ex. If a= 2 b=5 and c=1 what does ab-c equal?

2 x 5 – 1 = 10 -1 = 9

.

**GOOD LUCK ON
THE EOG!**

**TEST STRATEGIES**

* Guess and Test
* Make a table/chart/graph
* Make a diagram/picture
* Make and organized list
* Work backwards
* Work a simpler problem
* Find a pattern

**DIVISIBILITY RULES**

* **0:** numbers can’t be ÷ by 0 but you can do 0 ÷ #
* **1:** any # ÷ 1 is that #
* **2:** if it ends in an even #
* **3:**  add up the digits in the #, if the sum is a multiple of 3 then the bigger # can be ÷ by 3
* **4:** look at the last 2 digits in the #, if it ends in 00 or that # can be ÷ by 4 then the whole # can be ÷ by 4
* **5:** ends in 5 or 0
* **6:** must be divisible by 2 and 3
* **7 and 8:** no rule
* **9:** add the digits in the # up and if the sum can by ÷ by 9 then the bigger # can be ÷ by 9
* **10:** ends in 0

**TEST TIPS**

* Get plenty of rest the night before
* Eat a good breakfast the morning of the test
* RELAX!!
* As soon as you’re allowed to start, quickly write down helpful formulas and notes on your scrap paper so you don’t forget during the test
* Use process of elimination
* You can write in your test book so WRITE ALL OVER IT. Cross out wrong answers, highlight/underline/circle important words.
* Circle your correct answer in the test book so if you get off on your bubble sheet you can easily go back and fix things.
* Pace yourself and don’t rush through the test because you could make careless mistakes.
* **BELIEVE IN YOURSELF!!**

**PROBABILITY**

* **Theoretical Probability:** what ***should*** ***happen*** in a probability experiment
* **Experimental Probability:** what ***actually happens*** in a probability experiment
* **Sample Space:** All the possible outcomes
* **Tree Diagram:** Use it to show you all the ways/combinations that can happen
* **Combinations:** arrangements that can be made (Ex. outfits, ice cream w/ toppings)
* Can be represented in fractions, ratios, and/or percents
* Be careful because in some problems they try to trick you. Examples:
	+ Roll more than one dice
	+ Not putting a name/marble back in the bag after its already been picked
	+ When using positions of things, such as people with jobs or books on a shelf, they can’t be in more than one place at a time so you have one less option to choose from each time you fill a spot

**DECIMALS**

* **Adding and Subtracting:** line the decimals up and add/subtract like a regular # and bring the decimal straight down
* **Multiplying:**Move the decimal left the number of of numbers following the #s in the ?

 54.78
 x 1.2

 10956

 + 54780

 55.736

* **Dividing:**

If you are doing DECIMAL ÷ WHOLE # ***do not*** move the decimal, but if you ÷ by a decimal you will have to move the decimal

 15.6 ÷ 0.02 🡪 1560 ÷ 2

Moved the decimal 2 times to the right to get rid of the decimal in 0.02 so had to move the decimal to the right 2 times in 15.6

* **Place Value:** after the decimal the place values from closest to the decimal and moving right are:

**.** tenths hundredths thousandths ten thousandths and so on