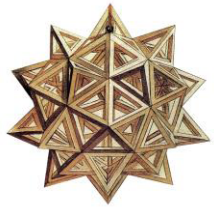
Big Apple Academy **2025** **Mathematics Department**



Summer Math Homework Package Grade 7 → 8

It is important that you keep practicing your mathematical Knowledge over the summer to be ready for **8th grade**.
In this Package you will find a calendar of activities for the month of July and August.
What should you do?

- Take a new notebook for every-day practice. For each day you will need 2 pages;
- Start each day with vocabulary words: copy each word from the given day-list, find and write the meaning of each word in your notebook on the front page (pages 1,3,5, . . . and so on):
- Use the internet to find the meaning of each word you do not know:

  https://dynamiclearningmaps.org/sites/default/files/documents/ERP/dlm_math_glossary.pdf

- Solve the problem of the day and write the solution with full explanation on the back page (pages 2,4,6,. . . and so on);
- Have the date of the entry. Have a clear and complete answer. Be neat and organize.
- Do not forget to bring your notebook to school on September 2, 2025 - the first school day.

Have a Great Summer!!

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Mathematics Department

July **7 → 8** **Monday**	Counting numbers Whole numbers Integers Rational numbers Order of operation **Tuesday**	Inequalities Rules for inequalities **Wednesday**	Unit Price Markup Markdown Commissions **Thursday**	Prime numbers Prime factorization **Friday**	Pythagorean theorem Area **Saturday**	**Incoming 8th Grade**
Expression Evaluation of the expression	Monomials Binomials Trinomials Factoring	System of equations Substitution Elimination Solution	Perimeter Square Rectangle	Variable Input Output Function	Range Mean Mode Median Central tendency	**Summer Home Work VOCABULARY**
Slope y-intercept Slope-intercept form Linear equation Rate of change	Divisibility Divisibility rules Proof	Area of the triangle Coordinate plane Quadrant	Number line Graphing the solution of inequality	Write 3 distinct integers, 3 distinct rational numbers and 3 distinct irrational numbers.	Consecutive Angles of the triangle Postulates Theorems	
Like terms Polynomials	Percent Discount	Scientific notation Negative exponent	Equation Roots	Circle Inscribed circle Radius Circumference	Average Sum	
Line Line segment Distance	Factor Common Factor Factoring formulas	Algebraic expression Evaluation of algebraic expression				

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July **7 → 8** **Monday**	Simplify: $2^4 - 3 - (8 - 1) \bullet 4$ **Tuesday**	What is the value of k, if $0.6 < (k \div 7) < 0.8$ **Wednesday**	What is the better price? (A) 15 oz for \$1.81 (B) 12 oz for \$1.52 **Thursday**	Find the sum of the first 11 prime numbers. **Friday**	Find the area of the right triangle with the hypotenuse of 13 inches and one leg of 5 inches. **Saturday**	**Incoming 8th Grade**
Place parenthesis in the following equation to make it true: $7+7-7 \div 7+7 \bullet 7 = 7$	Solve for x: $3x^2 - 5x - 2 = 0$	Solve graphically the system of equations: $Y = 2x^2 - 2x + 5$ $Y + 2x = 6$	Find the area of the square which has the same perimeter as a rectangle 12 by 2.	Express the variable W in terms of all other variables, if $h - 2W = kn + 1$	2 | 6 8 8 9 3 | 0 1 7 4 | 2 4 5 Find the range, the mean and the median.	**Summer Home Work for FUN**
Write the equation of the line QR, if Q(– 1, 2) and R (– 4, – 4).	Show that $n^3 - n$ Is divisible by 6 for any integer n.	The line $2y + 3x = 0$ cut the triangle out of the 1st quadrant. Find the area of this triangle.	Graph the solution for $2x - 4 \leq 8$ and $x + 5 > 7$.	Write 3 distinct integers, 3 distinct rational numbers and 3 distinct irrational numbers.	Angles of the triangle ABC is the consecutive even numbers. Find the measure of the largest angle.	
Subtract $4x^2 - x - 1$ from $3x^2 + 6x - 7$.	The price of the I-phone is \$595 after the discount of 15%. What was the original price?	Write in scientific notation form the product of $(1.3 \bullet 10^4)$ and $(2.5 \bullet 10^3)$.	Sam has 20 coins, some of them are dimes and other are nickels. How many dime if the total is \$1.55?	The circle is inscribed into an isosceles trapezoid with bases 4 and 16. Find the radius of the circle.	The average of 11 consecutive integers is 37. Find the largest integer of the set.	
___._____.__.__._ A B C D If 18=AC =3CD and BD = 8, find AB.	Factor completely: $16a^2 - 81$.	If 3a =7 and $b \div 3 = 1$, find the product ab.				

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August **7 → 8** **Monday**	**Tuesday**	**Wednesday**	Percent of increase Percent of decrease **Thursday**	Composite numbers. **Friday**	Rectangle Area of the circle **Saturday**	**Incoming 8th Grade**
Simple Interest Compound interest	Double inequality Triangular Rule	Graphing of the system of inequalities:	Exponents Negative exponents Operations with exponents	Rate of change Average speed	Box-and-whisker plot Quartile Inter-quartile range	**Summer Home Work VOCABULARY**
Parallel lines Perpendicular lines	GCF LCM	Parallel lines Transversal Corresponding Interior angles Exterior angles Same side	Statement Converse Inverse Contrapositive	Probability Frequency Simple event Compound events Tree diagram	Quadratic equation Roots of QE	
FOIL Simplification	The difference of two squares	Additive inverse	Linear equation	Absolute value Exponent	Proportion Scale factor Means terms Extremes terms	
Central angle Diameter Chord	Sequence Terms Arithmetic and Geometric sequences	Digit At least At most	Perfect squares Square root Cube root Radical Irrational numbers	Review		

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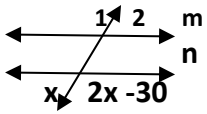
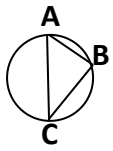
August **7 → 8** **Monday**	**Tuesday**	**Wednesday**	By what percent is the price increase from \$4.50 to \$5.40? **Thursday**	Find the sum of the first 5 positive composite numbers. **Friday**	Find the area of the circle if the sides of the rectangle inscribed into the circle are 3 and 4. **Saturday**	**Incoming 8th Grade**
If 3% of the number is 27, what is 37% of the same number?	What is the value of z, if z is an integer and $1 \le 5 - 2z < 3$	Solve graphically the system of inequalities: $Y \le -3x - 5$ $Y > 2x + 4$	Simplify: $(-3a^4b^6)^2 =$ $(-2m^6n^3)^2 =$	Ann drove 1 hr first 40 mi and the next 60 mile with the speed 30 mph. Find her average speed for the total trip.	2,5,6,6,8,11,16,18 Make a box-and-whisker plot for the given set. Find the inter-quartile range.	**Summer Home Work for FUN**
Write the equation of the line AB, if AB is perpendicular to CD: $y = 5x - 2$ and A(– 5, 2).	Find the greatest common factor and the least common multiple of 735 and 294.	 **m||n;** Find the measure of angle 2.	If I will try, I will do it on time. Write converse, inverse and contrapositive for the given statement. Make a truth table.	Bob tossed the fair coin and got 80 heads and 19 tails. What is his chance to get a head for the next toss?	If 2 and –3 are the roots of the equation $x^2 - ax + b = 0$, find a + b.	
Multiply $x^2 - x - 1$ by $x^2 - x + 1$.	What is the value: $2.87^2 - 7.13^2$	Solve algebraically: $x - 5y = 7$ $x + 2y = 2$	Solve for h: $3(h - 2) - 3(h + 1) = h$	Find the value: $\|2 - 11\| - 4^2 + 3$	If c% of 420 is 63, what is c?	
 AC is a diameter Find m∠B	-3, -1, 1, 3, 5, ... Find the 10th term of the sequence.	How many four-digits numbers has at least 1 digit 4?	Find the numerical value of the square root out of 1%.	Check everything you solved and prepare your questions for teacher