  **Big Apple Academy 2020 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**](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 the first school day.

**Have a Great Summer!!**

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| **July\_**  **7 🡪 8**  **Monday 29** | Counting numbers  Whole numbers  Integers  Rational numbers  Order of operation  **Tuesday 30** | Inequalities  Rules for inequalities  **Wednesday 1** | Unit Price  Markup  Markdown  Commissions  **Thursday 2** | Prime numbers  Prime factorization  **Friday 3** | Pythagorean theorem  Area  **Saturday 4** | **Incoming**  **8th Grade** |
| Expression  Evaluation of the expression  **6** | Monomials  Binomials  Trinomials  Factoring  **7** | System of equations  Substitution  Elimination  Solution  **8** | Perimeter  Square  Rectangle  **9** | Variable  Input  Output  Function  **10** | Range  Mean  Mode  Median  Central tendency  **11** | **Summer Home Work VOCABULARY** |
| Slope  y-intercept  Slope-intercept form  Linear equation  Rate of change  **13** | Divisibility  Divisibility rules  Proof  **14** | Area of the triangle  Coordinate plane  Quadrant  **15** | Number line  Graphing the solution of inequality  **16** | Write 3 distinct integers, 3 distinct rational numbers and 3 distinct irrational numbers.  **17** | Consecutive  Angles of the triangle  Postulates  Theorems  **18** |  |
| Like terms  Polynomials  **20** | Percent  Discount  **21** | Scientific notation  Negative exponent  **22** | Equation  Roots  **23** | Circle  Inscribed circle  Radius  Circumference  **24** | Average  Sum  **25** |  |
| Line  Line segment  Distance  **27** | Factor  Common Factor  Factoring formulas  **28** | Algebraic expression Evaluation of algebraic expression  **29** |  |  |  | davinci.png |

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| **July\_**  **7 🡪 8**  **Monday 29** | Simplify:  2⁴ – 3 – (8 –1)•4  **Tuesday 30** | What is the value of k, if  0.6 < (k ÷ 7) < 0.8  **Wednesday 1** | What is the better price?  (A) 15 oz for $1.81  (B) 12 oz for $1.52  **Thursday 2** | Find the sum of the first 11 prime numbers.  **Friday 3** | Find the area of the right triangle with the hypotenuse of 13 inches and one leg of 5 inches.  **Saturday 4** | **Incoming**  **8th Grade** |
| Place parenthesis in the following equation to make it true:  7+7–7 ÷7 +7 •7 = 7  **6** | Solve for x:  3x² – 5x – 2 = 0  **7** | Solve graphically the system of equations:  Y = 2x² - 2x + 5  Y + 2x = 6  **8** | Find the area of the square which has the same perimeter as a rectangle 12 by 2.  **9** | Express the variable W in terms of all other variables, if  h – 2W = kn + 1  **10** | 2 6 8 8 9  3 0 1 7  4 2 4 5  Find the range, the mean and the median. **11** | **Summer Home Work for FUN** |
| Write the equation of the line QR, if  Q(– 1, 2) and  R (– 4, – 4 ).  **13** | Show that n³ – n  Is divisible by 6 for any integer n.  **14** | The line  2y + 3x = 0 cut the triangle out of the 1st quadrant. Find the area of this triangle. **15** | Graph the solution for  2x – 4 ≤ 8 and  x + 5 > 7.  **16** | Write 3 distinct integers, 3 distinct rational numbers and 3 distinct irrational numbers.  **17** | Angles of the triangle ABC is the consecutive even numbers. Find the measure of the largest angle. **18** |  |
| Subtract 4x² – x –1 from 3x² + 6x – 7.  **20** | The price of the  I-phone is $595 after the discount of 15%. What was the original price?  **21** | Write in scientific notation form the product of (1.3•10⁴) and  **(**2.5•10³).  **22** | Sam has 20 coins, some of them are dimes and other are nickels. How many dime if the total is $1.55? **23** | The circle is inscribed into an isosceles trapezoid with bases 4 and 16. Find the radius of the circle. **24** | The average of 11 consecutive integers is 37. Find the largest integer of the set.  **25** |  |
| \_\_\_.\_\_\_\_\_.\_\_.\_\_.\_  A B C D  If 18=AC =3CD and  BD = 8, find AB.  **27** | Factor completely:  16a² –81 .  **28** | If 3a =7 and  b ÷ 3 = 1, find the product ab.  **29** |  |  |  | davinci.png |

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| **August-**  **7 🡪 8**  **Monday** | **Tuesday** | **Wednesday** | Percent of increase  Percent of decrease  **Thursday 30** | Composite numbers.  **Friday 31** | Rectangle  Area of the circle  **Saturday 1** | **Incoming**  **8th Grade** |
| Simple Interest  Compound interest  **3** | Double inequality  Triangular Rule  **4** | Graphing of the system of inequalities:  **5** | Exponents  Negative exponents  Operations with exponents  **6** | Rate of change  Average speed  **7** | Box-and-whisker plot  Quartile  Inter-quartile range  **8** | **Summer Home Work VOCABULARY** |
| Parallel lines  Perpendicular lines  **10** | GCF  LCM  **11** | Parallel lines  Transversal  Corresponding  Interior angles  Exterior angles  Same side  **12** | Statement  Converse  Inverse  Contrapositive  **13** | Probability  Frequency  Simple event  Compound events  Tree diagram    **14** | Quadratic equation  Roots of QE  **15** |  |
| FOIL  Simplification    **17** | The difference of two squares  **18** | Additive inverse  **19** | Linear equation  **20** | Absolute value  Exponent  **21** | Proportion  Scale factor  Means terms Extremes terms  **22** |  |
| Central angle  Diameter  Chord  **24** | Sequence  Terms  Arithmetic and Geometric sequences  **25** | Digit  At least  At most  **26** | Perfect squares  Square root  Cube root  Radical  Irrational numbers  **27** | Review  **28** |  | davinci.png |

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| **August-**  **7 🡪 8**  **Monday** | **Tuesday** | **Wednesday** | By what percent is the price increase from $4.50 to $5.40?  **Thursday 30** | Find the sum of the first 5 positive composite numbers.  **Friday 31** | Find the area of  the circle if the sides of the rectangle inscribed into the circle are 3 and 4.  **Saturday 1** | **Incoming**  **8th Grade** |
| If 3% of the number is 27, what is 37% of the same number?  **3** | What is the value of z, if z is an integer and  1 ≤ 5 – 2z < 3  **4** | Solve graphically the system of inequalities:  Y ≤ – 3x – 5  Y > 2x + 4  **5** | Simplify:  (– 3a⁴b⁶)² =  (– 2m⁶n³)² =  **6** | 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.  **7** | 2,5,6,6,8,11,16,18  Make a box-and-whisker plot for the given set.  Find the inter-quartile range.  **8** | **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).  **10** | Find the greatest common factor and the least common multiple of 735 and 294.  **11** | **1 2 m**  **n**  **x 2x -30**  **m||n;**  Find the measure of angle 2.  **12** | If I will try, I will do it on time. Write converse, inverse and contrapositive for the given statement. Make a truth table. **13** | Bob tossed the fair coin and got 80 heads and 19 tails. What is his chance to get a head for the next toss?  **14** | If 2 and –3 are the roots of the equation  x² – ax + b = 0,  find a + b.  **15** |  |
| Multiply x² – x –1 by x² – x +1.  **17** | What is the value:  2.87² – 7.13²  **18** | Solve algebraically:  x – 5y = 7  x + 2y = 2  **19** | Solve for h:  3(h –2) –3(h + 1) =h  **20** | Find the value:  | 2 – 11 | – 4² + 3  **21** | If c% of 420 is 63, what is c?  **22** |  |
| **A**  **B**  **C**  AC is a diameter  Find m∠B **24** | -3, -1, 1, 3, 5, . . . . .  Find the 10th term of the sequence.  **25** | How many four-digits numbers has at least 1 digit 4?  **26** | Find the numerical value of the square root out of 1%.  **27** | Check everything you solved and prepare your questions for teacher  **28** |  | davinci.png |