**Big Apple Academy 2018 Mathematics Department**



**Grade 7 🡪 8 Summer Homework Math Package**

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):

[www.a**mathsdictionaryforkids**.com/**dictionary**.html](http://www.amathsdictionaryforkids.com/dictionary.html)

* Use the internet to find the meaning of each word you do not know;
* 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 4, 2018 - the first school day.

**Have a Great Summer!!**

**Big Apple Academy Mathematics Department**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **July\_** **7 🡪 8**  **Monday 2** | Counting numbersWhole numbersIntegersRational numbersOrder of operation**Tuesday 3** | InequalitiesRules for inequalities**Wednesday 4**  | Unit PriceMarkup Markdown Commissions **Thursday 5**  | Prime numbersPrime factorization**Friday 6** | Pythagorean theorem Area**Saturday 7** | **Incoming****8th Grade** |
| ExpressionEvaluation of the expression**9** | MonomialsBinomialsTrinomialsFactoring**10** | System of equationsSubstitutionEliminationSolution**11** | PerimeterSquareRectangle**12** | VariableInput Output Function **13** | RangeMeanModeMedianCentral tendency  **14** | **Summer Home Work VOCABULARY** |
| Slope y-intercept Slope-intercept form Linear equation Rate of change **16** | DivisibilityDivisibility rulesProof**17** | Area of the triangleCoordinate planeQuadrant **18** | Number lineGraphing the solution of inequality**19** | Write 3 distinct integers, 3 distinct rational numbers and 3 distinct irrational numbers. **20**  | ConsecutiveAngles of the trianglePostulatesTheorems **21** |  |
| Like termsPolynomials**23** | PercentDiscount **24** | Scientific notationNegative exponent **25** | EquationRoots **26** | CircleInscribed circleRadiusCircumference  **27** | AverageSum**28** |  |
| LineLine segmentDistance**30** | Factor Common FactorFactoring formulas**31** | Algebraic expression Evaluation of algebraic expression**1** |  |  |  | davinci.png |

**Big Apple Academy Mathematics Department**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  **July\_** **7 🡪 8**  **Monday 2** | Simplify:2⁴ – 3 – (8 –1)•4 **Tuesday 3** | What is the value of k, if0.6 < (k ÷ 7) < 0.8**Wednesday 4** | What is the better price?(A) 15 oz for $1.81(B) 12 oz for $1.52**Thursday 5**  | Find the sum of the first 11 prime numbers.**Friday 6** | Find the area of the right triangle with the hypotenuse of 13 inches and one leg of 5 inches.**Saturday 7** | **Incoming****8th Grade** |
| Place parenthesis in the following equation to make it true:7+7–7 ÷7 +7 •7 = 7**9** | Solve for x:3x² – 5x – 2 = 0**10** | Solve graphically the system of equations:Y = 2x² - 2x + 5Y + 2x = 6**11** | Find the area of the square which has the same perimeter as a rectangle 12 by 2.**12** | Express the variable W in terms of all other variables, if h – 2W = kn + 1 **13** | 2 6 8 8 93 0 1 74 2 4 5Find the range, the mean and the median. **14** | **Summer Home Work for FUN** |
| Write the equation of the line QR, if Q(– 1, 2) andR (– 4, – 4 ).**16** | Show that n³ – n Is divisible by 6 for any integer n.**17** | The line 2y + 3x = 0 cut the triangle out of the 1st quadrant. Find the area of this triangle. **18** | Graph the solution for2x – 4 ≤ 8 and x + 5 > 7.**19** | Write 3 distinct integers, 3 distinct rational numbers and 3 distinct irrational numbers. **20**  | Angles of the triangle ABC is the consecutive even numbers. Find the measure of the largest angle. **21** |  |
| Subtract 4x² – x –1 from 3x² + 6x – 7.**23** | The price of the I-phone is $595 after the discount of 15%. What was the original price?**24** | Write in scientific notation form the product of (1.3•10⁴) and **(**2.5•10³).**25** | Sam has 20 coins, some of them are dimes and other are nickels. How many dime if the total is $1.55? **26** | The circle is inscribed into an isosceles trapezoid with bases 4 and 16. Find the radius of the circle. **27** | The average of 11 consecutive integers is 37. Find the largest integer of the set.**28** |  |
| \_\_\_.\_\_\_\_\_.\_\_.\_\_.\_  A B C DIf 18=AC =3CD andBD = 8, find AB.**30** | Factor completely:16a² –81 .**31** | If 3a =7 and b ÷ 3 = 1, find the product ab. **1** |  |  |  | davinci.png |

**Big Apple Academy Mathematics Department**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  **August-** **7 🡪 8**  **Monday**  |  **Tuesday**  |  **Wednesday**  | Percent of increase Percent of decrease **Thursday 2** | Composite numbers.**Friday 3** | RectangleArea of the circle **Saturday 4** |  **Incoming****8th Grade** |
| Simple Interest Compound interest**6** | Double inequalityTriangular Rule**7** | Graphing of the system of inequalities:**8** | ExponentsNegative exponentsOperations with exponents**9** | Rate of changeAverage speed **10** | Box-and-whisker plot QuartileInter-quartile range **11** | **Summer Home Work VOCABULARY** |
| Parallel linesPerpendicular lines**13** | GCFLCM**14** | Parallel linesTransversal Corresponding Interior anglesExterior anglesSame side  **15** | StatementConverseInverseContrapositive **16**   | Probability Frequency Simple event Compound events Tree diagram   **17**  | Quadratic equationRoots of QE **18** |  |
| FOILSimplification **20** | The difference of two squares **21** | Additive inverse **22** | Linear equation**23** | Absolute valueExponent**24** | Proportion Scale factorMeans terms Extremes terms  **25** |  |
| Central angleDiameterChord **27** | SequenceTermsArithmetic and Geometric sequences**28** | DigitAt leastAt most**29** | Perfect squares Square root Cube root Radical Irrational numbers**30** | Review **31** |  | davinci.png |

**Big Apple Academy Mathematics Department**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  **August-** **7 🡪 8**  **Monday**  |  **Tuesday**  |  **Wednesday**  | By what percent is the price increase from $4.50 to $5.40?**Thursday 2**  | Find the sum of the first 5 positive composite numbers.**Friday 3** | Find the area of the circle if the sides of the rectangle inscribed into the circle are 3 and 4. **Saturday 4** |  **Incoming****8th Grade** |
| If 3% of the number is 27, what is 37% of the same number?**6** | What is the value of z, if z is an integer and 1 ≤ 5 – 2z < 3 **7** | Solve graphically the system of inequalities:Y ≤ – 3x – 5 Y > 2x + 4**8** | Simplify:(– 3a⁴b⁶)² =(– 2m⁶n³)² =**9** | 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. **10** | 2,5,6,6,8,11,16,18Make a box-and-whisker plot for the given set.Find the inter-quartile range. **11** | **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).**13** | Find the greatest common factor and the least common multiple of 735 and 294.**14** |  **1 2 m** **n**  **x 2x -30** **m||n;** Find the measure of angle 2.**15** |  If I will try, I will do it on time. Write converse, inverse and contrapositive for the given statement. Make a truth table. **16**  | Bob tossed the fair coin and got 80 heads and 19 tails. What is his chance to get a head for the next toss?  **17**  | If 2 and –3 are the roots of the equation x² – ax + b = 0,find a + b. **18** |  |
| Multiply x² – x –1 by x² – x +1.**20** | What is the value:2.87² – 7.13²**21** | Solve algebraically: x – 5y = 7x + 2y = 2**22** | Solve for h:3(h –2) –3(h + 1) =h **23** | Find the value:| 2 – 11 | – 4² + 3**24** | If c% of 420 is 63, what is c?**25** |  |
|  **A**  **B**  **C**AC is a diameterFind m∠B **27** | -3, -1, 1, 3, 5, . . . . .Find the 10th term of the sequence.**28** | How many four-digits numbers has at least 1 digit 4?**29** | Find the numerical value of the square root out of 1%.**30** | Check everything you solved and prepare your questions for teacher **31** |  | davinci.png |