



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.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 1, 2015 - the first school day.

Have a Great Summer!!


Big Apple Academy


Mathematics Department

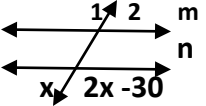
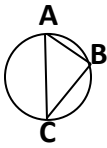
July										Incoming 8th Grade	
7 → 8											
Monday 27	Tuesday 28	Wednesday 29	Thursday 30	Friday 1	Saturday 2						
Expression Evaluation of the expression 4	Monomials Binomials Trinomials Factoring 5	System of equations Substitution Elimination Solution 6	Perimeter Square Rectangle 7	Variable Input Output Function 8	Range Mean Mode Median Central tendency 9	Summer Home Work VOCABULARY					
Slope y-intercept Slope-intercept form Linear equation Rate of change 11	Divisibility Divisibility rules Proof 12	Area of the triangle Coordinate plane Quadrant 13	Number line Graphing the solution of inequality 14	Write 3 distinct integers, 3 distinct rational numbers and 3 distinct irrational numbers. 15	Consecutive Angles of the triangle Postulates Theorems 16						
Like terms Polynomials 18	Percent Discount 19	Scientific notation Negative exponent 20	Equation Roots 21	Circle Inscribed circle Radius Circumference 22	Average Sum 23						
Line Line segment Distance 25	Factor Common Factor Factoring formulas 26	Algebraic expression Evaluation of algebraic expression 27	 28	 29	 30						

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<div style="background-color: black; color: white; padding: 5px; text-align: center; font-weight: bold; font-size: 1.5em;">July</div> <p style="text-align: center; font-weight: bold; font-size: 1.2em;">7 → 8</p> <p style="text-align: center;">Monday 27 Tuesday 28 Wednesday 29 Thursday 30 Friday 1 Saturday 2</p>	<p>Simplify: $2^4 - 3 - (8 - 1) \cdot 4$</p>	<p>What is the value of k, if $0.6 < (k \div 7) < 0.8$</p>	<p>What is the better price? (A) 15 oz for \$1.81 (B) 12 oz for \$1.52</p>	<p>Find the sum of the first 11 prime numbers.</p>	<p>Find the area of the right triangle with the hypotenuse of 13 inches and one leg of 5 inches.</p>	<h2 style="margin: 0;">Incoming 8th Grade</h2>															
<p>Place parenthesis in the following equation to make it true: $7+7-7 \div 7 +7 \cdot 7 = 7$</p> <p style="text-align: right;">4</p>	<p>Solve for x: $3x^2 - 5x - 2 = 0$</p> <p style="text-align: right;">5</p>	<p>Solve graphically the system of equations: $Y = 2x^2 - 2x + 5$ $Y + 2x = 6$</p> <p style="text-align: right;">6</p>	<p>Find the area of the square which has the same perimeter as a rectangle 12 by 2.</p> <p style="text-align: right;">7</p>	<p>Express the variable W in terms of all other variables, if $h - 2W = kn + 1$</p> <p style="text-align: right;">8</p>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="padding: 2px;">2</td><td style="padding: 2px;">6</td><td style="padding: 2px;">8</td><td style="padding: 2px;">8</td><td style="padding: 2px;">9</td></tr> <tr><td style="padding: 2px;">3</td><td style="padding: 2px;">0</td><td style="padding: 2px;">1</td><td style="padding: 2px;">7</td><td></td></tr> <tr><td style="padding: 2px;">4</td><td style="padding: 2px;">2</td><td style="padding: 2px;">4</td><td style="padding: 2px;">5</td><td></td></tr> </table> <p>Find the range, the mean and the median.</p> <p style="text-align: right;">9</p>		2	6	8	8	9	3	0	1	7		4	2	4	5	
2	6	8	8	9																	
3	0	1	7																		
4	2	4	5																		
<p>Write the equation of the line QR, if Q(-1, 2) and R(-4, -4).</p> <p style="text-align: right;">11</p>	<p>Show that $n^3 - n$ is divisible by 6 for any integer n.</p> <p style="text-align: right;">12</p>	<p>The line $2y + 3x = 0$ cut the triangle out of the 1st quadrant. Find the area of this triangle.</p> <p style="text-align: right;">13</p>	<p>Graph the solution for $2x - 4 \leq 8$ and $x + 5 > 7$.</p> <p style="text-align: right;">14</p>	<p>Write 3 distinct integers, 3 distinct rational numbers and 3 distinct irrational numbers.</p> <p style="text-align: right;">15</p>	<p>Angles of the triangle ABC is the consecutive even numbers. Find the measure of the largest angle.</p> <p style="text-align: right;">16</p>																
<p>Subtract $4x^2 - x - 1$ from $3x^2 + 6x - 7$.</p> <p style="text-align: right;">18</p>	<p>The price of the I-phone is \$595 after the discount of 15%. What was the original price?</p> <p style="text-align: right;">19</p>	<p>Write in scientific notation form the product of $(1.3 \cdot 10^4)$ and $(2.5 \cdot 10^3)$.</p> <p style="text-align: right;">20</p>	<p>Sam has 20 coins, some of them are dimes and other are nickels. How many dime if the total is \$1.55?</p> <p style="text-align: right;">21</p>	<p>The circle is inscribed into an isosceles trapezoid with bases 4 and 16. Find the radius of the circle.</p> <p style="text-align: right;">22</p>	<p>The average of 11 consecutive integers is 37. Find the largest integer of the set.</p> <p style="text-align: right;">23</p>																
<p style="text-align: center;"> $\frac{\cdot}{\cdot} \quad \frac{\cdot}{\cdot} \quad \frac{\cdot}{\cdot} \quad \frac{\cdot}{\cdot}$ A B C D If $18=AC=3CD$ and $BD=8$, find AB. </p> <p style="text-align: right;">25</p>	<p>Factor completely: $16a^2 - 81$.</p> <p style="text-align: right;">26</p>	<p>If $3a = 7$ and $b \div 3 = 1$, find the product ab.</p> <p style="text-align: right;">27</p>																			

August							Incoming 8th Grade
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Monday	Tuesday	Wednesday	Thursday 28	Friday 29	Saturday 30		
Simple Interest Compound interest 1	Double inequality Triangular Rule 2	Graphing of the system of inequalities: 3	Exponents Negative exponents Operations with exponents 4	Rate of change Average speed 5	Box-and-whisker plot Quartile Inter-quartile range 6	Summer Home Work VOCABULARY	
Parallel lines Perpendicular lines 8	GCF LCM 9	Parallel lines Transversal Corresponding Interior angles Exterior angles Same side 10	Statement Converse Inverse Contrapositive 11	Probability Frequency Simple event Compound events Tree diagram 12	Quadratic equation Roots of QE 13		
FOIL Simplification 15	The difference of two squares 16	Additive inverse 17	Linear equation 18	Absolute value Exponent 19	Proportion Scale factor Means terms Extremes terms 20		
Central angle Diameter Chord 22	Sequence Terms Arithmetic and Geometric sequences 23	Digit At least At most 24	Perfect squares Square root Cube root Radical Irrational numbers 25	Set Closed set 26	Part Fraction 27		

August							Incoming 8th Grade
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Monday	Tuesday	Wednesday	Thursday 28	Friday 29	Saturday 30		
<p>If 3% of the number is 27, what is 37% of the same number?</p> <p style="text-align: right;">1</p>	<p>What is the value of z, if z is an integer and $1 \leq 5 - 2z < 3$</p> <p style="text-align: right;">2</p>	<p>Solve graphically the system of inequalities: $Y \leq -3x - 5$ $Y > 2x + 4$</p> <p style="text-align: right;">3</p>	<p>By what percent is the price increase from \$4.50 to \$5.40?</p> <p>Simplify: $(-3a^4b^6)^2 =$ $(-2m^6n^3)^2 =$</p> <p style="text-align: right;">4</p>	<p>Find the sum of the first 5 positive composite numbers.</p> <p>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.</p> <p style="text-align: right;">5</p>	<p>Find the area of the circle if the sides of the rectangle inscribed into the circle are 3 and 4.</p> <p>2,5,6,6,8,11,16,18 Make a box-and-whisker plot for the given set. Find the interquartile range.</p> <p style="text-align: right;">6</p>	Summer Home Work for FUN	
<p>Write the equation of the line AB, if AB is perpendicular to CD: $y = 5x - 2$ and $A(-5, 2)$.</p> <p style="text-align: right;">8</p>	<p>Find the greatest common factor and the least common multiple of 735 and 294.</p> <p style="text-align: right;">9</p>	 <p>$m \parallel n$; Find the measure of angle 2.</p> <p style="text-align: right;">10</p>	<p>If I will try, I will do it on time. Write converse, inverse and contrapositive for the given statement. Make a truth table.</p> <p style="text-align: right;">11</p>	<p>Bob tossed the fair coin and got 80 heads and 19 tails. What is his chance to get a head for the next toss?</p> <p style="text-align: right;">12</p>	<p>If 2 and -3 are the roots of the equation $x^2 - ax + b = 0$, find a + b.</p> <p style="text-align: right;">13</p>		
<p>Multiply $x^2 - x - 1$ by $x^2 - x + 1$.</p> <p style="text-align: right;">15</p>	<p>What is the value: $2.87^2 - 7.13^2$</p> <p style="text-align: right;">16</p>	<p>Solve algebraically: $x - 5y = 7$ $x + 2y = 2$</p> <p style="text-align: right;">17</p>	<p>Solve for h: $3(h - 2) - 3(h + 1) = h$</p> <p style="text-align: right;">18</p>	<p>Find the value: $2 - 11 - 4^2 + 3$</p> <p style="text-align: right;">19</p>	<p>If c% of 420 is 63, what is c?</p> <p style="text-align: right;">20</p>		
 <p>AC is a diameter Find $m\angle B$</p> <p style="text-align: right;">22</p>	<p>-3, -1, 1, 3, 5, Find the 10th term of the sequence.</p> <p style="text-align: right;">23</p>	<p>How many four-digits numbers has at least 1 digit 4?</p> <p style="text-align: right;">24</p>	<p>Find the numerical value of the square root out of 1%.</p> <p style="text-align: right;">25</p>	<p>Find at least one number set of 3 integers, which is closed under division.</p> <p style="text-align: right;">26</p>	<p>..... 0 x 0.2 All marks are equally spaced. Find x.</p> <p style="text-align: right;">27</p>	