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Mathematics Summer Assignment for Algebra I students

****All incoming Pre-AICE Mathematics Upper Academy students are expected to begin the 2019-2020 school year with the Khan Academy lessons listed below, at a Level 1 or higher. Please note that the more you practice/master in Khan Academy, the better for you in your preparation for this course. The graded requirement will be based on the lessons below being 'level 1'. Anything completed beyond the requirement will be graded as extra credit. *IT IS THE RESPONSIBILITY OF EACH STUDENT TO HAVE THEIR USERNAME AND PASSWORD TO THEIR KHAN ACADEMY ACCOUNT.**



DUE DATE: August 23, 2019

7th Grade Mission

I. Negative Numbers: addition & subtraction

At least Level 1? ☒

1. Adding Negative Numbers _____
2. Subtracting Negative Numbers _____
3. Adding & Subtracting Negative Numbers _____
4. Adding & Subtracting Negative Fractions _____
5. Equivalent Expressions with negative numbers _____
6. One-Step equations with negatives (add & subtract) _____

II. Negative Numbers: multiplication & division

At least Level 1? ☒

1. Multiplying Negative Numbers _____
2. Negative signs in fractions _____
3. Simplify complex fractions _____
4. Multiplying Positive & Negative Fractions _____
5. Dividing Positive & Negative Fractions _____
6. Dividing Mixed Numbers with negatives _____
7. Exponents with Integer Bases _____
8. Exponents with Negative Fractional Bases _____

III. Fractions, decimals, & percentages

At least Level 1? ☒

1. Rewrite decimals as fractions _____
2. Rewriting decimals as fractions challenge _____
3. Converting fractions to decimals _____
4. Adding & Subtracting Rational Numbers _____
5. Discount, tax, markup, and commission word problems _____

IV. Rates & Proportional Relationships

At least Level 1? ☒

1. Rates with Fractions _____
2. Solving Proportions _____

V. Expressions, Equations, & Inequalities

At least Level 1? ☒

1. Combining like terms with negative coefficients _____
2. Combining like terms with negative coefficients & distribution _____
3. Combining like terms with rational coefficients _____
4. Distributive property with variables (negative numbers) _____
5. Two-step equations _____
6. Two-step equations with decimals & fractions _____
7. One-step inequalities _____
8. Two-step inequalities _____

VI. Geometry

At least Level 1? ☒

1. Radius & Diameter _____
2. Circumference of a circle _____
3. Area of a circle _____
4. Area & Circumference of parts of circles _____
5. Name angles _____
6. Identify supplementary, complementary, & vertical angles _____
7. Complementary & Supplementary angles (visual) _____
8. Vertical angles _____
9. Finding Missing angles _____
10. Constructing triangles _____
11. Explore scale copies _____
12. Constructing scale drawings _____

VII. Statistics & Probability

At least Level 1? ☒

1. Simple probability
2. Experimental probability
3. Comparing probabilities
4. Probabilities of Compound events
5. Making inferences from random samples

8th Grade Mission

VIII. Numbers and Operations

At least Level 1? ☒

1. Writing Fractions as Repeating Decimals
2. Converting Repeating Decimals to Fractions
3. Square Roots
4. Cube Roots
5. Multiply Powers
6. Powers of Powers
7. Divide Powers
8. Powers of Products & Quotients
9. Negative Exponents
10. Multiply & Divide Powers (Integer Exponents)
11. Powers of Ten
12. Approximately with Powers of 10
13. Scientific Notation
14. Multiplying & Dividing in Scientific Notation
15. Adding & Subtracting in Scientific Notation

IX. Solving Equations with One Unknown

At least Level 1? ☒

1. Equations with Variables on both sides
2. Equations with parenthesis
3. Equations with Parenthesis: decimals & fractions

X. Linear Equations and Functions

At least Level 1? ☒

1. Rates & proportional relationships
2. Solutions to 2-variable equations
3. Intercepts from a graph

4. Slope from graph _____
5. Slope from two points _____
6. Slope from equation _____
7. Slope-intercept intro _____
8. Graph from slope-intercept form _____
9. Slope-intercept equation from graph _____
10. Slope-intercept equation from two points _____
11. Recognize functions from tables _____
12. Recognize functions from graphs _____
13. Linear & nonlinear functions _____

XI. Systems of Equations

At least Level 1? 

1. Solutions of systems of equations _____
2. Systems of Equations with graphing _____
3. Systems of Equations with elimination _____
4. Equivalent systems of equations _____
5. Systems of Equations with substitution _____
6. Find angles in triangles _____
7. Find angles in isosceles triangles _____
8. Finding angle measures using triangles _____
9. Use Pythagorean theorem to find right triangle side lengths _____
10. Right triangle side lengths _____
11. Distance between two points _____
12. Volume of cylinders _____
13. Volume of spheres _____
14. Volume of cones _____

XII. Geometric Transformations

At least Level 1? 

1. Identify transformations _____
2. Translate points _____
3. Translate shapes _____
4. Determine Translations _____
5. Rotate points (basic) _____
6. Determine rotations (basic) _____
7. Reflect points _____
8. Reflect shapes _____
9. Dilate points _____

XIII. Data and Modeling

At least Level 1? 

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|---|-------|
| 1. Constructing scatter plots | _____ |
| 2. Positive and negative linear associations from scatter plots | _____ |
| 3. Describing trends in scatter plots | _____ |
| 4. Interpreting slope and y-intercept for linear models | _____ |
| 5. Reading two-way frequency tables | _____ |
| 6. Two-way frequency tables | _____ |
| 7. Two-way relative frequency tables | _____ |
| 8. Reading two-way relative frequency tables | _____ |