Reviewing for the Math 1 EOC…

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| **Number & Quantity** **(5% – 10%)** | * Review/Know all exponent rules
* Know what a rational exponent means
* Be able to rewrite expressions that involve radicals as rational (fractional) exponents and vice-versa
* Be able to convert numbers from one unit to a different unit (example: miles/hour 🡪 feet/second)
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| Problems from released test: 15, 16, 20 |
| **Algebra** **(22% - 27%)** | * Be able to look at an equation and interpret what the individual parts of it mean (both numbers and variables). You need to be able to do this for **linear equations, exponential equations, and quadratic equations.**
* Be able to rewrite linear/exponential/quadratic equations in different forms.
* Know how to factor a quadratic expression in order to find the zeros of the function.
* Add, subtract, and multiply polynomials
* Be able to write and solve equations from word problems (equations can be linear, exponential, or quadratic)
* Know when answers to equations are reasonable and when they are not (when do answers “make sense” and when do they not)
* Be able to solve an equation for a variable
* Solve linear equations and inequalities in one variable
* Solve quadratic equations in one variable
* Solve a system of equations by graphing, substitution, or elimination
* Know that the graph of an equation in two variables is the set of all of its solutions
* Graph and solve linear inequalities; be able to identify graphed solutions
* Graph and solve a system of linear inequalities; be able to identify graphed solutions (shaded region on a coordinate plane)
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| Problems from released test: 1, 2, 3, 5, 6, 7, 8, 10, 17, 18, 33, 34, 35, 36, 40,  |
| **Functions** **(35% - 40%)** | * Know what the domain and the range of a function are
* Know that a function has one element of the domain assigned to exactly one element of the range
* Know how to use function notation to evaluate functions and generate a range
* Be able to recognize a sequence of number and to extend the sequence
* When given a table/graph/equation of a function, be able to identify and assign meaning to different parts of the function (rate, intercepts, maximums/minimums, symmetries, intervals of increase or decrease)
* Sketch a graph from a verbal description
* Identify a domain from a graph (linear or exponential)
* Find the rate of change of a function from a table, equation, or graph
* Be able to graph linear, exponential, and quadratic functions by hand or on a calculator
* Write a function in different forms (example; quadratic equations in both standard form and in factored form)
* Interpret exponential expressions (i.e. be able to identify rate of change from looking at the function
* Compare properties of two functions that are expressed in different ways (i.e. given a quadratic equation and a quadratic graph, be able to say which has the larger maximum)
* Recognize when there is a relationship between variables and write a function to represent that relationship (linear, exponential, quadratic)
* Write equations for arithmetic sequences
* Write equations for geometric sequences
* **(released #11 specifically)…**identify the effect on a graph when f(x) is replaced by f(x) + k for specific values of k (both positive and negative). When you add a constant, k, to a function, it moves the graph of the function vertically. If k is added or subtracted from the x-value, it translates the graph horizontally.
* Distinguish between situations that can be modeled with linear functions (constant rates) and exponential functions (a quantity grows or decays by a constant percent rate or there is a common ratio)
* Construct a linear (arithmetic) function or an exponential (geometric) function given a graph, a verbal description, a table, or a set of ordered pairs
* Understand that a quantity that increases exponentially will exceed a quantity that increases linearly or quadratically
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| Problems from released test: 4, 9, 11, 12, 13, 14, 19, 21, 22, 23, 24, 25, 26, 37, 38, 39, 41, 42, 45 |
| **Geometry** **(10% - 15%)** | * Know precise definitions of: angle, circle, perpendicular line, parallel line, line segment
* Use the concepts of slope and distance (distance formula) to prove that a figure in the coordinate plane is a special geometric shape
* Find equations of lines that are parallel or perpendicular to each other
* Use slope to determine if lines are parallel or perpendicular
* Use the midpoint formula to find the midpoint between two points or use the midpoint and one point to find the other endpoint
* Find areas and perimeters of polygons by using the distance formula
* Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems
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| Problems from released test: 27, 28, 43, 44, 46 |
| **Statistics & Probability** **(15% - 20%)** | * Represent data with dot plots, histograms, and box plots
* Understand which measures of center (mean, median, mode) or which measure of spread (interquartile range, standard deviation) describe data
* Understand that, the higher the variability of data, the more spread the data has
* Understand how outliers affect data
* Create and read two-way frequency tables
* Calculate relative frequencies from two–way tables
* Create and analyze scatterplots
* Describe form and relationship of data in a scatterplot
* Write a function rule to fit a set of data (line of best fit/trend line) by hand and with calculator
* Assess the fit of a function by analyzing residuals (difference between actual y-value and the predicted y-value)(difference between the line of best fit and the data point)
* Understand that the slope is a rate of change of data and the y-intercept is a constant term (usually initial amount or a one-time fixed amount)
* Understand that the correlation coefficient, r, is a measure of the strength and direction of linear relationship (0 ≤ r ≤ 1….closer to one, closer point is to line, closer to 0, the weaker the relationship. Sign of r determines direction, positive or negative)
* Distinguish between correlation and causation
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| Problems from released test: 29, 30, 31, 32, 47, 48, 49, 50 |