Common Core Math 1

Definitions and Formulas Students Might Need to Know

| **Concept/Vocabulary Word** | | **Definition/Formula** |
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| measures of center | | Numerical measures that describe the typical value of a quantitative data set. In this unit, we will be studying the mean and the median. |
| measures of spread | | Numerical measures that describe how much values typically vary from the center in a quantitative data set. In this unit, we will be studying interquartile range and standard deviation. |
| mean | | A numerical measure of center that is the arithmetic average of the data. |
| mean absolute deviation | | A numerical measure of spread that shows how much data values vary from the mean for a quantitative data set. A low mean absolute deviation indicates that the data points tend to be very close to the [mean](http://en.wikipedia.org/wiki/Mean), whereas a high mean absolute deviation indicates that the data points are spread out over a large range of values. The process of calculating the mean absolute deviation involves taking the absolute value of the deviations from the mean. |
| median | | A numerical measure of center that describes the middle value of a data set. Note that the median does not have to be one of the values in the data set, but a value that divides the data set in half so that 50% of the data values lie above the median and 50% of the data values fall below the median. |
| standard deviation | | A numerical measure of spread that shows how much data values vary from the mean for a quantitative data set. A low standard deviation indicates that the data points tend to be very close to the [mean](http://en.wikipedia.org/wiki/Mean), whereas a high standard deviation indicates that the data points are spread out over a large range of values. The process of calculating the standard deviation involves squaring the deviations from the mean. |
| interquartile range | | A measure of the spread of the middle 50% of a set of quantitative data; the difference between the upper and lower quartiles. **IQR = *Q*3 − *Q*1** |
| outlier | | A data value that does not fit the overall pattern of the data distribution. In the case of one-variable data, an outlier is **a value that is more than 1.5 IQR above the third quartile or below the first quartile.** |
| Distributive Property | | For every real number a, b, and c:  **a(b + c) = ab + ac and a(b - c) = ab – ac.** |
| Distance Formula | | The distance d between any two points is given by the formula **d =** |
| Midpoint Formula | | The midpoint M of a line segment with endpoints A and B is |
| Pythagorean Theorem | | The Pythagorean Theorem describes the relationship of the lengths of the sides of a right triangle where in any right triangle, the sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse. |
| Area of a circle | | Area of a circle is given by http://cmapp.wcpss.net/cgi-bin/mimetex.cgi?%5Cdisplaystyle%5CPitimes the square of the radius |
| Circumference | | Circumference is the perimeter of or distance around a circle given by times the diameter of the circle. |
| cone | | a solid, 3-dimensional figure with one vertex and one circular base.  **Volume of a Cone:** |
| Cylinder | | A solid, 3-dimensional figure with a curved side and two circular, congruent bases that are in parallel planes  **Volume of a Cylinder:** |
| Sphere | | A three dimensional solid that is perfectly round, ex. A ball.  **Volume of a Sphere:** |
| Slope Intercept Form | | The equation of a line with given slope and y-intercept |
| Point-Slope Form | | The equation of a non-vertical line that passes through the point with slope *m* is |
| standard form | | where A, B, C are real numbers and A and B are not both zero |
| Direct Variation | | a linear function that can be expressed in the form |
| Slope | | a number used to describe the steepness, incline, gradient, or grade of a straight line; the ratio of the "rise" (vertical change) to the "run" (horizontal change) of any two points on the line: |
| NOW-NEXT | | is the recursive process of getting from one number to the next number in the sequence. |
| Exponential function | | is used to model a relationship in which a constant change in the independent variable gives the same proportional change (percent of increase or decrease) in the dependent variable. |
| Exponential Decay | | occurs when an exponential function has a *b* value between 0 and 1.  **where 0<b<1** |
| Exponential growth | | occurs when an exponential function has a *b* value greater than 1. **where b>1** |
| Quadratic Function |  |
| axis of symmetry | Vertical line that intersects the vertex of a parabola. If the parabola is reflected across this line, it will match up perfectly on itself. |