| Item | CCRS | Process | Knowledge needed | Skills needed | Possible misconceptions | Objective |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | AF 302 | 1. Subtract inside absolute value <br> 2. Take absolute value. <br> 3. Subtract result. | Definition and interpretation of absolute value Order of operations | Basic operations | Forgetting to make absolute value positive. | 1. SWBAT use absolute value to simplify numerical expressions. |
| 2 | AF 401 | 1. Translate "45 each hour" to 45x. <br> 2. Translate "flat $\$ 30$ consulting fee" to +30 . <br> 3. Set up equation $45 x+30=210$ <br> 4. Soive for x . | Definition of a variable | Translate flat fee into constant, "each" into multiplication, and make equation equal to bill of $\$ 210$. | Switch variable and fixed cost | 1. SWBAT define a variable <br> 2. SWBAT translate words to math expressions. |
| 3 | AF 401 | 1. Translate 14 MPG and 36 MPG into $14 x$ and $36 x$. <br> 2. Set both terms equal to 1008 and solve. <br> 3. Find the difference of the result. | Definition of a variable | Translate miles per gallon Make equation equal to 1008 Use subtraction | Not taking the difference | 1. SWBAT define a variable <br> 2. SWBAT translate words to math expressions. |
| 4 | A 303 | 1. Combine like terms | Definition of like terms | How to use basic operations | Reversing signs | 1. SWBAT combine like terms using basic operations. |
| 5 | G 505 | 1. Recognnize that all exterior sides are 6. <br> 2. Add sides | Properties of squares Properties of equalaterial triangles. <br> Perimeter | Add to get perimeter | Find perimeter of only triangle or square | 1. SWBAT find perimeters of polygons by adding sides. <br> 2. SWBAT find missing sides of polygons using properties of simple polygons. |
| 6 | A 404 | 1. FOIL <br> 2. Combine like terms | Definiition of like terms | How to FOIL <br> How to comine like terms | Mess up signs | 1. SWBAT FOIL two binomials using multiplication and combining like terms. |
| 7 | AF 401 | 1. Translate question to equation $.4 \mathrm{x}=8$. <br> 2. Solve for $x$. <br> 3. Multiply result by .15 . | Percent definition and meaning | How to convert a percent into a decimal and multiply. | Might take $15 \%$ of 8. Might take $40 \%$ of 8 . | 1. SWBAT find percentages of given values. <br> 2. SWBAT to translate words into math expressions. <br> 3. SWBAT solve multi-step problems with percentages. |
| 8 | A 403 | 1. Combine like terms <br> 2. Set equal to 447. <br> 3. Solve for x . | Definition of like terms | Translate words to math expressions | Addition or subtraction errors | 1. Combine like terms. <br> 2. SWBAT translation words into math expressions. |
| 9 | G 511 | 1. Plug $A$ and midpoint into midpoint formula and solve for x. <br> 2. Plug midpoint value into formula and solve for $y$. <br> 3. Add $x+y$ | Midpoint formula | Plug one endpoint and midpoint into midpoint formula to solve for endpoint coordinates. | Plug values into midpoint formula instead of solving for midpoint | 1. SWBAT solve for an endpoint, given another endpoint and a midpoint. |
| 10 | G 606 | 1. Label points <br> 2. Use slope formula to determine slope of $A B$. <br> 3. Use slope formula and plug in answer choices to find same slope between C and D. <br> NOTE: Could also use distance formula for this problem. | Slope definiton Slope formula Distance formula Properties of rectangles | How to plug points into the slop formula How to plug points into the distance formula | Plugging coordinates into wrong places in slope or distance formula | 1. SWABT find slopes between points using the slope formula. <br> 2. SWBAT find distances between points using the distance formula. <br> 3. SWBAT find the coordinates of a rectangle using parallel lines segments. <br> 4. Find the sides of a rectangle using the ditance formula. |
| 11 | N 705 | 1. Add total number of each type of shirt. <br> 2. Multiply shirts by prices | Definition of sum product | How to read tables Translate "total value" in the context of the problem. | Freaking out at matrix, which is really a table. Addition or multiplication errors | 1. SWBAT extract relevant information from a table to solve a problem. <br> 2. SWBAT translate words into math expressions. |
| 12 | G 402 | 1. Find last triangle angle by subtracting other two angles from 180. <br> 2. Find $x, y, z$ from supplementary angles. <br> 3. Adding result. | Angle measure of triangle Definitoin of supp. Angles | How to plan and visualize to find angles in the right order to get to $x, y, z$ | Addition/Subtraction errors. Thininking exterior of a triangle is 180. | 1. SWBAT find the angle of a triangle, given two angles. <br> 2. SWBAT find a missing angle, given the supplementary angle. <br> 3. Use several angle properties to find an unknown angle measure |
| 13 | S 304 | 1. Find the number of votes for Whitney <br> 2. Divide by the total number of votes | Table properties Percent definition and calculation | Find a specifc piece of data on a table Calculate a percentage by dividing the part by the whole | Thinking that the number of votes is the percent of votes | 1. SWBAT interpret a table and find the information needed <br> 2. SWBAT calculate a percentage given the part and whole |


| 14 | S 502 | 1. Find the number of votes for Lue <br> 2. Divide by the total number of votes to get percent of votes <br> 3. Multiply percent of votes by the total number of voters | Table properties Percent definition and calculation | Find a specifc piece of data on a table Calculate a percentage by dividing the part by the whole <br> Apply the percentage to a population by percent * population Transform percent to fraction Cross multiplication | Thinking that the number of votes is the percent of votes | 1. SWBAT interpret a table and find the information needed <br> 2. SWBAT calculate a percentage given the part and whole <br> 3. SWBAT apply a percentage to a population or transform a percentage into a fraction solve as a proportion through cross multiplication |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 15 | S 402 | 1. Find the number of votes for Gomez <br> 2. Divide by the total number of votes to get percent of votes <br> 3. Multiply percent of votes by 360 degrees | Table properties Percent definition and calculation Circle properties Central angle definition | Find a specifc piece of data on a table Calculate a percentage by dividing the part by the whole The sum of the central angles in a circle is 360 degrees <br> Convert percent to degrees by percent * 360 degrees | Percent = to degrees | 1. SWBAT interpret a table and find the information needed <br> 2. SWBAT calculate a percentage given the part and whole <br> 3. SWBAT see sectors as fractions of a circle, and recognize a pie chart is a form of 100\% <br> 4. SWBAT apply knowledge that a circle has 360 degrees in order to transform a percent to a sector |
| 16 | G 603 | 1. Assign side measure of 4 to square. <br> 2. Conclude ED=2, based on midoint <br> 3. Take area of ADE and ADB and find ratio. | Ratio definiton and format Formula for area of a triangle Properties of a square Properties of a triangle Midpoint definiton | How to set up a ratio How to plug in base and height to find the area of a triangle. <br> How to visualize polygon to split it into smaller shapes. | Misreading triangles and using the wrong triangles | 1. SWBAT find the area of a triangle, using the base and height. <br> 2. SWBAT find the midpoint of a line segment by dividing the length in two. <br> 3. SWBAT solve multistep geometry problems that involve integrating concepts, planning, and/or visualization |
| 17 | G 606 | 1. Identify that the slope is $2 / 3$ <br> 2. Recognize the slope of a parallel line would also be $2 / 3$ | Slope-intercept form and components Parellel line properties | Find the slope given a linear equation in slope-intercept form Recognize that parallel lines have the same slope | Confusion of slope vs. y-intercept Parellel lines have opposite or inverse slopes | 1. SWBAT find the slope given a linear equation in slope-intercept form <br> 2. SWBAT recognize that parallel lines have the same slope |
| 18 | AF 501 | 1. Subtract answer choices from 30. <br> 2. Find which result that matches a ratio of 2:3 | Ratios and Proportions | Knowing how to work backwards How to simplify fractions | Accidentally answering with longer piece. | 1. SWBAT how to simplify fractions by dividing by a common factor. <br> 2. SWBAT set up and solve a proportion in the context of a problem. |
| 19 | A 509 | 1. Use knowledge of perfect squares: $\mathrm{V} 49=7$ and $\mathrm{V} 64=8$ 2. Recognize that V 58 is greater than V 49 but less than V 64 , therefore 8 is the smallest integer greater than V58 | Definition of "smallest integer greater than" Number line Perfect square roots | Place imperfect square roots on a number line between perfect square roots | Confusion of radicals with GCF | 1. SWBAT estimate the closest perfect root of an imperfect root (ex. Square, cubed, etc) |
| 20 | G 705 | 1. Find area of walls, including door and window by multiplication. <br> 2. Subtract area of door and window. <br> 3. Divide result by 300 | Area of a rectangle | Find the area of a rectangle <br> Round <br> Translate words into math expressions | Difficulty reading the problem | 1. SWBAT take the area of a rectangle by multiplying length by width. 2. SWBAT translate words into math expressions. |
| 21 | A 506 | 1. Subtract 8 from both sides to create a trinomial equation <br> 2. Factor the trinomial into $(x+4)(x-2)=0$ <br> 3. Separate into 2 equations, $x+$ $4=0 \text { and } x-2=0$ <br> 4. Solve for $x$ | Definition of polynomial Definition of a quadratic | Inverse operations <br> Factoring trinomials using reverse FOIL or the box method Solving quadratic equations | Using the factored integers as the solution instead of setting each group equal to 0 | 1. SWBAT Factor quadratic equations and deterine the solution |
| 22 | N 605 | 1. Simply the coefficients by cancelling out $3 / 3$ <br> 2. Subtract the lower order exponent from the higher order exponent, 6-4 = 2 <br> 3. Leave the exponential term in the denominator | Components and properties of exponents Law of division for exponents with the same base | Simplify the coefficients of exponential terms like fractions When dividing exponents with the same base, keep the base, subtract the lower order exponent from the higher order exponent, leave the term at the location of the higher order exponent | Subtracting the higher order exponent from the lower order | 1. SWBAT simplify exponential expressions using the law of division of exponents |
| 23 | G 704 | 1. Match answer choices to correct quadrants on the coordinate plane. | Signs of $x$ and $y$ values in the coordinate plane. Quadrants on the coordinate plane. |  | Only choosing one quadrant when there are two. <br> Switching the signs of the quadrants | 1. SWBAT identify the quadrants of the coordinate plane. <br> 2. SWBAT identify the signs of the $x$ and $y$ values on the coordinate plane. |
| 24 | AF 502 | 1. Translate question to algebraic expression $1400+$ 5.25b | Fixed cost definition and meaning Variable cost definition and meaning | Recognize that fixed cost should not have a variable, and that variable cost should Translate words into the math expression, total cost $=$ fixed cost + variable cost | Subtract variable cost from fixed cost <br> Attach a variable to fixed cost | 1. SWBAT to translate words into math expressions |
| 25 | G 603 | 1. Calculate the ratio of the lengths of the 2 triangles, 7. 5/ 3 $=2.5$ <br> 2. Divide the other two sides of trinagle LKM by the ratio to get the other two sides of ABC <br> 3. Alternatively, for steps 1 and <br> 2, create a proportionof the respective sides and use cross multiplication to find the missing side <br> 4. Add all sides of triangle $A B C$ | Definition of similar polygons Defintion of perimeter | Recognize that the respective sides of similar polygons have the same ratio Calculate the ratio between two similar triangles <br> Apply the ratio, to find the lengths of a similar triangle <br> Calculate perimeter of a triangle | Multiply instead of divide by the ratio Solve for area instead of perimeter | 1. SWBAT use law of proportions to find the missing length of a similar polygon <br> 2. SWBAT calculate the perimeter of a polygon |
| 26 | A 509 | 1. The numerator is unchange, focus on the denominator <br> 2. $\mathrm{V} 7 * \mathrm{~V} 7=7$, so $\mathrm{a}=7$ | Definition of perfect squares | Recognize for all values of $\mathrm{a}, \mathrm{Va}$ * $\mathrm{Va}=\mathrm{a}$ | Leaving out the radical symbol, ex. a ${ }^{*} \mathrm{Va}=\mathrm{a}$ | 1. SWBAT use properties of perfect squares to simplify radical expressions |


| 27 | A 502 | 1. Translate first hot air balloon to 70-6s <br> 2. Translate second hot air balloon to $10+15 \mathrm{~s}$ <br> 3. Set two expressions equal to each other <br> 4. Solve for $s$ | Definition of a variable Inverse operations | Equate "rising" with + and"falling" with Equate constant rate with variable component <br> Translate words into algebraic expressions Equate "same height" with setting two expressions equal to each other | Creating just one equation Thinking "constant rate" means fixed, and not attach a variable | 1. SWBAT to translate words into math expressions <br> 2. SWBAT solve linear euqations using inverse operations |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 28 | S 405 | 1. Multiply $4 \times 2 \times 6$ | Fundamental counting principal | Recognize FTCP problems |  | 1. SWBAT use the fundamental counting principal to find the total number possibiliites for a given suituation. |
| 29 | G 601 | 1. Double side length of cube A. 2. Cube result. | Formula for volume of a cube | How to cube numbers by multiplying | Just double volume of cube A, instead of doubling sides | 1. SWBAT translate words into math expressions. <br> 2. SWBAT find the volume of a cube by cubing the side. |
| 30 | A 512 | 1. Use the provided equation, plug in $\$ 10,000$ for $P, 0.04$ for $r$, and 5 for $n$ | Components of the compounded annual interest equation | Plug in values into a given equation Convert percent to decimal Order of operations | Improper order of operations Using 4 for $4 \%$ instead of 0.04 | 1. SWBAT apply the compounded annual interest equation to calculate current value |
| 31 | G 405 | 1. Find radius by dividing diameter. <br> 2. Plug radius and height into the formula |  | How to find a radius from a diameter. How to evaluate functions by plugging in | Using the diameter instead of the radius | 1. SWBAT find the radius of a circle, given the diamter <br> 2. SWBAT evalute expressions given input values. |
| 32 | F 708 | 1. Plugg into f and simplify | Composite function defintion and meaning. | How to plug one function into another. | Plugging f into g. | 1. SWBAT find composite functions by plugging one function into another. |
| 33 | S 501 | 1. Multiply goals by number of matches with total. <br> 2. Add result <br> 3. Add number of matches to get total number of games. <br> 4. Divide result of \#2 by total number of games. | Average defintion | How to get and interpret information from a table <br> How to round | Not going to multiply to get total number of goals. | 1. SWBAT extract relevant information from a table to solve a problem. <br> 2. SWBAT translate words into math expressions. <br> 3. SWBAT average two or more numbers |
| 34 | G 402 | 1. Recognize that angles 1 and 2 are supp. to $x$. <br> 2. Use corresponding angles to recognize that x is congruent to 8. <br> 3. Use supp. angles to recognize that 9 and 10 are supp to 8 . <br> 4. Recognize that $d$ is not parallel to c so the angles at the bottom do not apply to the problem, | Vertical angles Supplementary angles Parallel line with transversal properties | How to plan and visualize to use parallel line properties to find a supp. angles. | Not realizing the d is not parallel and oncluding the bottom angles | 1. SWBAT find angle measures using vertical angles. <br> 2. SWBAT find angle measures using supplementary angles. <br> 3. SWBAT find angle meausures using parallel lines cut by a transversal. <br> 4. SWBAT use several angle properties to find an unknown angle measure. |
| 35 | N 605 | $\begin{aligned} & \text { 1. } 3^{\wedge} 3=27 \\ & \text { 2. }\left(x^{\wedge} 3\right)^{\wedge} 3=x^{\wedge} 9 \end{aligned}$ | Properties of exponents Distributive property Power rule of exponents | Use the distributive property to apply the power to the coefficient and exponent Recognize that $a^{\wedge} b$ is a times itself $b$ times Recognize that $\left(a^{\wedge} b\right)^{\wedge} c=a^{\wedge}\left(b^{*} c\right)$ | Confusing power rule of exponents with multiplication rule of exponents | 1. SWBAT simplify exponential expressions using the power rule of exponents |
| 36 | A 602 | 1. Combine like terms to get $24>4 x$ <br> 2. Divide by 4 <br> OR <br> 1. Combine like terms to get $4 x>24$ <br> 2. Divide by -4 and switch inequality sign | Interpretations of linear inequalities | Solve linear inequalities Change the sign of an inequality when dividing by a negative | Not switching inequallity sign Switching inequaality sign when you don't have to. | 1. SWBAT solve a linear inequality using inverse operations. <br> 2. SWBAT solve an inequality involving a negative value by changing the inequality sign. |
| 37 | G 606 | 1. Realize that 90 degrees clockwise from the first quardrant has to be in the fourth quadrant. <br> 2. Pick answer choice that is in the fourth quadrant. | Quadrants on the coordinate plane <br> Angle assignments on the coordinate plane. Rotation definiton | How to rotate be a given angle measure and direction | Rotating the wrong way. | 1. SWBAT identify the quadrants of the coordinate plane. <br> 2. SWBAT rotate objects in the plane by a given angle measure and direction. |
| 38 | G 604 | $\begin{aligned} & \text { 1. Solve for KL using } \\ & \text { pythagorean theorem } \\ & \text { 2. Sine of angle } M=\mathrm{V} 44 / 12 \end{aligned}$ | Pythagorean theorem Definition and properities of sine | Use pythagorean theorem to find a missing side of a right triangle Sine of an angle = length of opposite / length of hypotenus | Confusing sine with cosine and tangent | 1. SWBAT pythagorean theorem to find a missing side of a right triangle 2. SWBAT find the sine of angle |
| 39 | G 402 | 1. Plug in answer choices to see which choice makes all three angles equal. | Angle bisector defintion Supplementary angles | How to plan, visualize and apply the definition of angle bisector and supplementary angles to find that all three angles must be equal and add to 180 . | Thinking it cannot be determined because they give you no numbers. | 1. SWBAT use angle bisectors to find the measures of angles. <br> 2. SWBAT find a missing angle, given the supplementary angle. <br> 3. Use several angle properties to find an unknown angle measure |
| 40 | A 511 | 1. Divide $8 \times 10^{\wedge} 12$ by $4 \times 10^{\wedge} 4$ <br> 2. Simplify 8 and 4 <br> 3. Subtract exponents to simplify $10^{\wedge} 12 / 10^{\wedge} 4$ | Exponent laws Scientific notation helpful, but not needed Average definition and interpretation | How to simplify fractions <br> Divide like bases with exponents by subtraction <br> How to take an average | Multiply constants instea of adding. Divide, add or multiply exponents instead of subtracting | 1. SWBAT average two or more numbers <br> 2. SWBAT simplify quotient expressions with the same base by subtracting exponents. |
| 41 | G 705 | 1. Label sides <br> 2. Plug into formula | Law of Cosines (Not needed, but nice if they know it.) | How to evaluate functions by plugging in | Students don't read relevant parts of the question and mislabel the triangle. | 1. SWBAT solve for sides of triangles using the Law of Cosines (again, not needed, but nice) <br> 2. SWBAT evalute expressions given input values. |


| 42 | G 511 | 1. Add $1 / 5$ and $1 / 3$, divide by 2 2. Turn each fraction answer into a decimal, and see which matches with the answer from step 1 | Definition of "halfway" Number line | Find the midpoint between two numbers by averaging them <br> Find the corresponding rational number by un-rationalizing the potential answers | Think $1 / 4$ is halfway between $1 / 5$ and $1 / 3$ | 1. SWBAT calculate the midpoint between two numbers |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 43 | G 501 | 1. Recognize that base angles are congruent. <br> 2. Use trigangle to find that middle angle is 130 . <br> 3. Find supplement to result is 50. <br> 4. Use right hand triangle to conclude that DBC is 95 . | Isosoles Trapezoids <br> Parallel line with transversal properties Supplemental angles | How to plan and visualize to find angles in the right order. | Assuming right angles. Making wrong assumptions based on parallel lines. | 1. SWBAT find a missing angle, given the supplementary angle. <br> 2. SWBAT find angle meausures using parallel lines cut by a transversal. <br> 3. SWBAT use several angle properties to find an unknown angle measure. |
| 44 | G 601 | 1. $\mathrm{V} 50=$ side of larger square <br> 2. $\mathrm{V} 18=$ side of smaller square <br> 3. $\mathrm{V} 50-\mathrm{V} 18=\mathrm{x}$ <br> 4. $5 \sqrt{ } 2-3 \sqrt{ } 2=2 \sqrt{ } 2$ | Definition of area of a square Definition of radical like terms | Recognize the side of a square = varea of square <br> Take out perfect squares from radicals To subtract radical terms with the same radical, subtract the values outside the radical, and keep value inside the radical the same | Confusing area with length of a side Improper simplification of radical expressions | 1. SWBAT calculate the length of the sides of a square given the area <br> 2. Simplify radical expressions through subtracting like terms |
| 45 | N 604 | 1. Assess that only one answer contains a perfect square | Definition of rational number Properties of perfect squares | Memorize perfect squares Recognize that $\mathrm{V}\left(\mathrm{a}^{\wedge} 2\right)=a$ | Confuse rational with irrational definition <br> Assume that if the denominator is a perfect square, the numerator is too | 1. SWBAT identify perfect squares <br> 2. SWBAT distinguish characteristics of rational numbers from irrational numbers |
| 46 | N 701 | 1. Pick numbers for $a$ and $b$ <br> 2. Plug in $a$ and $b$ <br> 3. Find which answer choice matches the result. | Absolute value definition and interpretation. Order of operations | How to identify questions where you can pick numbers. | Forget to take positive numbers for absolute value | 1. SWBAT interpret absolute value as the distance from zero. <br> 2. SWBAT use the picking numbers strategy to answer questions that involve algebra in the question ans answer. |
| 47 | S 401 | 1. Multiply 78 by 5 . <br> 2. Set up equation $(390+x) / 6=80$ <br> 3. Solve for x . <br> NOTE: Could also plug in answer choices to average formula to see which one works. | Average defintion and interpretation | Recognize that that easiest way to get an average of 78 is to make every score 78. | Not knowing how to recognize that the first 5 scores should be 78 . | 1. SWBAT translate words to math expressions. <br> 2. SWBAT average two or more numbers. |
| 48 | N 704 | 1. Recognize that the greatest modulus will have the largest values of $a$ and $b$. <br> 2. Translate largest values of a and $b$ to mean the largest $x$ and $y$ values on the coordinate plane. | Coordinate plane <br> Square root properties <br> Perfect square properties | How to read a coordinate plane Recognize that the largest value will be the biggest value under the square root. The ability to combine several math concepts. | Forgetting to drop the negative when squaring a negative numbers. | 1. SWBAT square an integer by multiplying it by itself. <br> 2. SWBAT combine several math concepts to come to a logical conclusion. |
| 49 | A 512 | 1. Convert $8^{\wedge}(2 x+1)$ to $2^{\wedge} 3^{\wedge}(2 x+1)$ <br> 2. Simplify to $2^{\wedge}(6 x+3)$ <br> 3. Convert $4^{\wedge}(1-x)$ to $2^{\wedge} 2^{\wedge}(1-x)$ <br> 4. Simplify to $2^{\wedge}(2-2 x)$ <br> 5. Remove like bases and bring down exponents <br> 6. Solve for $x$ | Definition of real numbers Properties of exponential bases | Convert exponential terms with different bases to the same base using the power rule of exponents Remove like bases and bring down the exponents Isolate $x$ through inverse operations | Removing the base from both sides of the equation even if the bases are not the same | 1. SWBAT convert an equation so that both exponential expressions have the same base <br> 2. SWBAT solve equations by removing the base of exponential expressions with the same base |
| 50 | AF 704 | 1. Look at the graph, match it to the defintion of an even function. | Definiton of odd and even function | How to recognize an even function, given the graph. |  | 1. SWBAT determine if a function is even or odd, given a graph |
| 51 | S 604 | 1. Figure out the total number of intergers between 999 and 100 by subtracting. (Sample Space) <br> 2. Find the number of numbers between 100 and 999 that have a zero in one digit by looking at multiples of 10,100 , and zeros in the tens digit. (Event) <br> 3. Dividing the sample space and event. | Meaining of digit Properties of numbers that will have a zero in one digit. Probabiltiy defintion | How to find probabiltiy using event and sample space. <br> The ability to combine several math concepts. | Missing one of the categories of numbers with a zero in at least one digit (i.e. forgetting multiples of 100) | 1. SWBAT find a simple probabiltiy using event and sample space. 2. SWBAT combine several math concepts to come to a logical conclusion. |
| 52 | G 603 | 1. Find the slope of line $q$ is 2 . <br> 2. If angles $a$ and $b$ are congruent, then the slopes of the lines musts be opposite. Thus, the slope of line $r$ is -2 . | Slope intercept form of a line Relationship between angles and slope | Use the m-value of slope intercept form to find the slope. <br> The ability to combine several math concepts. | Think lines either have same slope because the angles are the same. Think the slopes are opposiite reciprocal because getting confused with perpendicular lines. | 1. SWBAT idenitfy and interpret the parts of a line in slope intercept form. 2.SWBAT Determine whether a slope is negative or positive, based on the graph. <br> 3. SWBAT Match the slope of a graph to the context of a problem. <br> 4. SWBAT combine several math concepts to come to a logical conclusion. |


| 53 | F 706 | 1. Determine angle crresponding to inverse tangent. <br> 2. Take cosine of resulting angle. | Trig ratios Defintion and interpretation of inverse trig function Composition of functions | How to work with variables How to find a trig ratio, given the sides How to take an inverse trig function | Won't recognize that the inverse function refers to an angle. | 1. SWBAT find the six trig ratios of a right triangle using SOHCAHTOA if necessary. <br> 2. SWBAT find an angle given the sides of a right triangle by using an inverse trig function. <br> 3. SWBAT combine several math concepts to come to a logical conclusion. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 54 | G 507 | 1. Find area of circle using the radius | Formula for area of a circle. | Recognize that they are asking for the area of a circle | Use circumference instead | 1. SWBAT find the area of a circle in the context of a problem. |
| 55 | G 609 | 1. Plug radius into equation for a circle | Equation of a circle | 0 | Not knowing equation of a circle | 1. SWBAT idenitfy the center and radius of a circle using the equation. <br> 2. SWBAT write the equation of a circle, using the center and radius. |
| 56 | G 705 | 1. Draw line and point to symbolize 100 miles of highway and other radio station. <br> 2. Determine that a radius of 60 would leave 40 miles that WGWB could not reach. <br> 3. Since WGGW reaches 52 miles, they must overlap by 12 , which is what is left from the 40 that WGWB cannot reach. | Definition and interpretation of radius | How to draw a picture to fit a situation. The ability to combine several math concepts. | Not being able to draw and interpret picture from words | 1. SWBAT combine several math concepts to come to a logical conclusion. |
| 57 | AF 704 | 1. Find where the curve of ( $x$ - <br> $1)^{\wedge} 4$ is under $x-1$ on the graph. | Interpretation of coordinates as inputs and outputs. Inequality notation | How to read a coordinate plane |  | 1. SWBAT identify inputs and outputs of functions on graphs. <br> 2. SWBAT use inequalities to compare values. |
| 58 | N 701 | 1. Plug in any integer for $t$ and $u$ (ex. $\mathrm{X}=31$, where $\mathrm{T}=3 \mathrm{u}=1$ ) <br> 2. Reverse integers, $y=13$ <br> 3. $x-y=31-13=18$ <br> 4. Plug in for answer choices and see which gets 18 | Place values (tens and unit digit) <br> Definition of equivalent Definition of reverse | Assign arbitrary values for each digit Use subtraction <br> Plug in values for the answer choices to find match | Trouble reading and comprehending the question | 1. SWBAT plug in numbers for multivariable problems and use guess and check |
| 59 | G 506 | 1. Find sides of triangle using the distance formula. <br> 2. Determine trirangle is not a right triangle, based on the sides. <br> 3. Find height by subtracting $y$ coordinates of $A$ and $B$. <br> 4. Plug height and base into area of a triangle. | Distance formula <br> Area of a triangle Definiton and interpretation of a right triagle, especially realated to area. | How to plug points into the distance formula How to find the height of any triangle by using a perpendicular. <br> How to plug base and height into the area of a triangle | Switching coordinates of distance formula <br> Forgetting area of a triangle. Thinking the triangle is a right triangle, so using one of the sides as the height. | 1. SWBAT find the area of a triangle, using the base and height. <br> 2. SWBAT find distances between points using the distance formula. <br> 3. SWBAT identify the properties of right, actue and obtuse triangles. <br> 4. SWBAT solve multistep geometry problems that involve integrating concepts, planning, and/or visualization |
| 60 | AF 703 | 1. Find the first term, $a$, by plugging $r$ into the given formula and setting it equal to 200. <br> 2. Multiply "a" by .15 | Geometric series defintion and interpretation | How to set up an equation How to translate words into math expressions. | Solving for a, but not findingg second term | 1. SWBAT recognize a geometric series 2. SWBAT set up and solve an equation in the context of a problem. <br> 3. SWBAT translate words into math expressions. |

