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| **Standard(s):**  **8.G.6, 8.G.7 and 8.G.8** | |
| **Questions** | **Answers** |
| 1. http://jwilson.coe.uga.edu/emt669/student.folders/morris.stephanie/emt.669/essay.1/image1.gifIf the triangle is right, describe the relationship between squares A, B, and C. | 1. |
| 2. To get to football practice Brandon walks seven blocks south and then six blocks west. How much shorter would it be if he could walk directly to school? | 2. |
| 3. Dehlia has several sticks, whose lengths are recorded below.  15 in, 5 in, 4 in, 9 in and 12 in.  She wants to use three of them to make a right triangle. Which three should she choose and why? | 3. |
| 4. A right triangle has one leg with a length of 2.8 inches and another leg with a length of 11.3 inches. What is the approximate length of the hypotenuse of the triangle? | 4. |
| 5. What is the approximate measurement of the diagonal of the cube if the cube’s length is 6 feet? | 5. |

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| **Standard(s):**  **NC.M1.A-CED.2 and NC.M1.A-REI.6** | |
| **Questions** | **Answers** |
| 1. Oasis Fitness members pay a $20 membership fee and $3 for each class they take. Non-members pay $6 for each class at Oasis Fitness they take. Write and solve a system of equations to determine when the memberships would cost the same. | 1. |
| 2. Tickets for a concert cost $35 each if you order them online, but you have to pay a service fee of $15 per order (unlimited tickets per order). The tickets are $49 the night of the concert at the door. Write and solve a system of equations that would help you determine which way you should buy 6 tickets. | 2. |
| 3. A online streaming plan is $9 a month plus $2 per premium feature. A second plan costs $15 a month and $1 for each premium feature. Write, graph, and solve a system of equations that would help you determine the number of premium features that would make the online streaming plans cost the same amount. | 3. |
| 4. Your team is planning a field trip for 130 people. The trip will use four drivers and two types of vehicles: buses and vans. A bus can seat 50 passengers and a van can seat 15. Write and solve a system of equations to find how many buses and vans will be needed. | 4. |
| 5. Two angles are complementary. One angle is 10 degrees larger than the other. Find the measure of each angle. | 5. |

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| **Standard(s):**  **NC.M1.A-CED.3 and NC.M1.A-REI.6** | |
| **Questions** | **Answers** |
| 1. One plane at 400 feet is ascending at a rate of 100 feet per minute, while another plane at 3200 feet is descending at a rate of 75 feet per minute. How long will it take the two planes to be at the same altitude? | 1. |
| 2. I was planning to spend no more than $30 on meat for a cookout. I need to buy both hamburger and chicken. Hamburger costs $4.00/lb. and chicken costs $2.50/lb.. Graph and find three possible combinations of hamburger and chicken I can buy? | 2. |
| 3. A website allows users to download individual songs or an entire album. All individual songs cost the same to download, and all albums cost the same to download. Ryan pays $14.94 to download 5 individual songs and 1 album. Seth pays $22.95 to download 3 individual songs and 2 albums. How much does the website charge to download a song? How about an entire album? | 3. |
| 4. Taxis in Raleigh charge $2.25 to pick up and add $2.80 per mile. In Chicago, taxis charge $4.50 and add $1.75 for each quarter mile. How many miles and for what price could you take a taxi in both cities for the same price? | 4. |
| 5. Friends often pick up lunch for each other. When it was Mike’s turn to make the food run, he bought 5 sandwiches and 3 bags of chips. He spent $29.50. When Lisa went, she got 4 sandwiches and 4 bags of chips for $26. How much does a sandwich cost? How about a bag of chips? | 5. |

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| **Standard(s):**  **NC.M1.A-REI.5** | |
| **Questions** | **Answers** |
| 1. In order to solve the system of equations below using the elimination method, what would be the best first step and why? | 1. |
| 2. In order to solve the system of equations below using the elimination method, what would be the best first step and why? | 2. |
| 3. For the system, which variable should you eliminate first and why? | 3. |
| 4. In order to solve the system of equations below using the elimination method, what would be the best first step? | 4. |
| 5. Iyanna decided to solve the system using elimination by multiplying the first equation by 3. Is this the best first step Ingrid could take? | 5. |

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| **Standard(s):**  **NC.M1.A-REI.12** | |
| **Questions** | **Answers** |
| 1.Highlight on the graph the solution set of the system of inequalities shown on the graph. Write a scenario that could be modeled by the solution set.  http://www.glencoe.com/sec/math/studytools/books/0-02-825326-4/images/IQ08-013W-822894.gif | 1. |
| 2. Billy is a student and he can work for at most 20 hours a week. He needs to earn at least $375 to cover his weekly expenses. His car parking job pays $10.50 an hour and his pizza delivery job pays $12.75 an hour. Write and graph a system of inequalities for the given situation. | 2. |
| 3. Jack is packing containers into boxes for shipping. Each box can hold either 16 small containers or 4 large containers. He needs to pack at least 20 boxes and at least 450 containers. Write and graph a system of inequalities for the given situation. | 3. |
| 4. The HGMS Garden Club is buying plants and soil for the garden. The soil costs $4.50 per bag and the plants cost $7.50 each. They want to buy at least 20 plants and can spend no more than $250. Write and graph a system of inequalities for the given situation. | 4. |
| 5. Maryanna wants to bake at most 30 dozen cookies for a bake sale. She wants to make sugar cookies that sells for $2.95 per dozen and peanut butter chocolate chip cookies that sells for $4.50 per dozen. She also wants to make at least $80 in sales. Write and graph a system of inequalities for the given situation. | 5. |

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| **Standard(s):**  **NC.M1.G-GPE.4** | |
| **Questions** | **Answers** |
| 1. A triangle has vertices A (1,1), B (-2,-3), and C(5,-2). Find the perimeter of the triangle. Round to the nearest hundredth. | 1. |
| 2. Triangle ABC has vertices located at (-5, 1), (-5, 9) and (1,1). What type of triangle is ABC? | 2. |
| 3. A quadrilateral has vertices (1,2), (1, 6), and (9,6). Find the fourth vertex. Verify it is a rectangle, providing evidence. | 3. |
| 4. What shape most precisely describes the quadrilateral with vertices at  (-10, -7), (-6, 1), (-4, 1) and (-1, -7)? | 4. |
| 5. Triangle ABC has a right triangle at C. How could you prove that this is a right triangle?  http://i.stack.imgur.com/mb5hf.png | 5. |

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| **Standard(s):**  **NC.M1.G-GPE.5** | |
| **Questions** | **Answers** |
| 1. Write an equation in slope-intercept form for the lines that passes through point (7, -8) and is parallel to y = x - 5. | 1. |
| 2. Write an equation in slope-intercept form for the lines that passes through point (4, 8) and is parallel to  5x – y = 7. | 2. |
| 3. Write an equation in slope-intercept form for the lines that passes through point (-6, 3) and is perpendicular to  Y = (1/3)x - 4. | 3. |
| 4. Write an equation in slope-intercept form for the lines perpendicular to the graph of the equation y = (3/4)x – 9 and passes through the x-intercept of that line. | 4. |
| 5. If the line through (4, 4) and (5, d) is parallel to the graph of y = 6x + 5, what is the value of d? | 5. |

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| **Standard(s):**  **NC.M1.G-GPE.6** | |
| **Questions** | **Answers** |
| 1. What are the coordinates of the midpoint of the line segment with endpoints at (7, -4) and (8, -8)? | 1. |
| 2. Circle H has a diameter BF. The center of Circle H has coordinates (-7, -9) and Point B has coordinates (5, 7). What are the coordinates of Point F? | 2. |
| 3. The vertices of a parallelogram HIJK are H(-8, -5), I(-6, 5), J(4, 5) and K(2, -5). The diagonals HJ and IK intercept at their midpoints, point P. Find the coordinates of P. | 3. |
| 4. A map is drawn on a coordinate grid. The school is located midway between Star’s house at (-4, 8) and Moon’s house at (10, 12). Where is the school located on the map? | 4. |
| 5. A circle has a diameter that extend from (-5, -9) to (8, -5). What are the coordinates of the center of the circle? | 5. |

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| **Standard(s):**  **8.EE.8** | |
| **Questions** | **Answers** |
| 1. Sue and Hannah both leave for the post office at the same time. Sue walks from her house to the post office. The equation represents the distance d, in miles Sue walks in t hours. Hannah drives her car to the post office. The equation , represents her d is distance in miles for each hour, t.  After how many minutes will Sue and Hannah meet? | 1. |
| 2. Admission to a local amusement park cost $42 for children ages 3-12 and $60 for adults ages 12 and up. Jake and his boy scout troop bought a total of 23 children tickets. If the group spent a total of $1,206 dollars on tickets, how many adult tickets were purchased? | 2. |
| 1. Solve the following system of equations: | 3. |
| 4. Find the solution to the system, then find the product of x and y. | 4. |
| 5.Solve the system of equations. | 5. |