**Test Name: 2019-2020 Math 8 Semester 1 Exam REVIEW**

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| **1** | Segment is a transformation of segment . | | | |
|  | **A** | is a translation of left 3 units. | **C** | is a reflection of over the line . |
|  | **B** | is a 90-degree rotation of . | **D** | is a translation of up 3 units. |

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| **2** | Rectangle PQRS has side lengths of 7 and 3 as shown on the grid below.    Rectangle PQRS is reflected across the y-axis to form Rectangle What is the length of | | | |
|  | **A** | 3 | **C** | 7 |
|  | **B** | 6 | **D** | 14 |

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| **3** | Reflect Quadrilateral ABCD over the y-axis and then translate it six units down.  What are the coordinates of the final image of Point B? | | | |
|  | **A** | (–10, 3) | **C** | (–3, –1) |
|  | **B** | (–4, –3) | **D** | (4, –9) |

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| **4** | A geometric transformation is described algebraically as shown below.    Which best describes this transformation? | | | |
|  | **A** | a translation 3 units up and 3 units to the right | **C** | a 180° degree rotation centered at the point |
|  | **B** | a translation 3 units down and 3 units to the left | **D** | a dilation with scale factor 3 centered at the origin |

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| **5** | Esteban drew Triangle JKL on a coordinate plane, with J(–3, 5), K(–1, –4), and L(2, 4). Then he drew Triangle J'K'L', the result of the dilation () . What are the coordinates of Point J'? | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **6** | Which graph shows a rectangle similar to the rectangle below? | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **7** | A piece of artwork has similar rectangles that are translated. Which one of these best represents this artwork? | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **8** | are similar.  What could be the lengths of the sides of | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **9** | The rectangular dining room floor at Mrs. Washington’s restaurant is 16 feet by 20 feet. She wants to buy a rug that is geometrically similar to the dining room floor. Which rug dimensions correspond to a rug that would be similar to the floor? | | | |
|  | **A** | 8 feet by 12 feet | **C** | 12 feet by 15 feet |
|  | **B** | 10 feet by 14 feet | **D** | 14 feet by 18 feet |

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| **10** | Parallel lines g and h are shown on one grid, and parallel lines k and j are shown on the other grid.    Which statement is true in terms of the transformation from lines g and h to create lines j and k? | | | |
|  | **A** | Lines g and h were translated to the right 8 units. | **C** | Lines g and h were reflected over the y-axis and then reflected over the x-axis. |
|  | **B** | Lines g and h were reflected over the y-axis and then translated up 3 units. | **D** | Lines g and h were reflected over the x-axis and then translated to the right 5 units. |

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| **11** | Parallel lines l, m, and n are shown.  If line l is mapped to line m and line m is mapped to line n, what is true for the transformation that took place? | | | |
|  | **A** | Line n was translated up 8 units. | **C** | Line l was translated down 8 units. |
|  | **B** | Line m was translated up 4 units | **D** | Line m was translated down 4 units. |

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| **12** | Quadrilateral PQRS is rotated 180° about the origin.  Which angle in Quadrilateral WXYZ must necessarily measure the same as Angle Q? | | | |
|  | **A** | Angle W | **C** | Angle Y |
|  | **B** | Angle X | **D** | Angle Z |

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| **13** | Figure WXYZ is shown below.  Figure WXYZ is translated up 3 units and 4 units to the right to create Figure W'X'Y'Z'. What is the measure of angle Z' after this transformation? | | | |
|  | **A** | 103° | **C** | 77° |
|  | **B** | 96° | **D** | 58° |

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| **14** | In the following diagram, two parallel lines are cut by a transversal.  The measure of which angle is equal to the measure of | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **15** | Maple Street and Elm Street are parallel to each other and both intersect Arbor Street.    Which statement must be true? | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **16** | In the figure below, and are parallel to of    Which pair of angles is congruent? | | | |
|  | **A** | and | **C** | and |
|  | **B** | and | **D** | and |

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| **17** | A triangle having vertices at , , and is dilated by a scale factor of to form Triangle A'B'C'.  Which statement is true? | | | |
|  | **A** | The length of A'C' is one-half the length of AC. | **C** | The length of A'C' is twice the length of AC. |
|  | **B** | The length of A'C' is the same as the length of AC. | **D** | The length of A'C' is four times the length of AC. |

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| **18** | Given that these two right triangles are similar, what is the value of x? | | | |
|  | **A** |  | **C** | 10 |
|  | **B** | 7 | **D** |  |

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| **19** | In the figure below,    is similar to .  What is the length of  ? | | | |
|  | **A** | 8 in | **C** | 10 in |
|  | **B** | 9 in | **D** | 16 in |

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| **20** | A church has an isosceles triangular window. The lengths of the sides of this window are 2.5 feet, 2.5 feet, and 3.5 feet. A nearby church has a similar window. Which best represents the length of sides of the second window? | | | |
|  | **A** | 1.25 feet, 1.25 feet, 1.25 feet | **C** | 5 feet, 5 feet, 4 feet |
|  | **B** | 1.25 feet, 1.25 feet, 2.75 feet | **D** | 3.75 feet, 3.75 feet, 5.25 feet |

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| **21** | Which is a dilation of with a scale factor of | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **22** | Triangle PRQ is similar to Triangle XYZ as shown below. The dimensions are given in  centimeters (cm).  What is the length, in centimeters, of | | | |
|  | **A** | 0.45 | **C** | 1.25 |
|  | **B** | 1 | **D** | 5 |

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| **23** | Which of the following equations has no solution? | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **24** | Which equation has no solution? | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **25** | Which equation has only one solution? | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **26** | Which statement regarding the number of solutions for the linear equation shown below is true? | | | |
|  | **A** | There is no solution. | **C** | There are exactly two solutions. |
|  | **B** | There is exactly one solution. | **D** | There are infinitely many solutions. |

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| **27** | A linear equation is shown below.  Which statement is true? | | | |
|  | **A** | The equation has no solution. | **C** | The solutions to the equation are 3 and 7. |
|  | **B** | The solution to the equation is 3. | **D** | The equation has infinitely many solutions. |

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| **28** | If what is the value of x? | | | |
|  | **A** | –171 | **C** | 54 |
|  | **B** | –19 | **D** | 60 |

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| **29** | If the equation has infinitely many solutions, what is the value of k? | | | |
|  | **A** | 7 | **C** | 27 |
|  | **B** | 10 | **D** | 30 |

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| **30** | What value of x makes the equation true? | | | |
|  | **A** | 6 | **C** | 12 |
|  | **B** | 8 | **D** | 24 |

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| **31** | What value of x makes the equation true? | | | |
|  | **A** | 3 | **C** | 7 |
|  | **B** | 6 | **D** | 11 |

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| **32** | One of the tires on the truck Ian is rebuilding has a slow leak. The recommended inflation pressure of the tire is 35 pounds per square inch (psi). Due to the leak, the tire loses approximately 3 psi of pressure each day. The equation below can be used to determine I, the tire’s inflation pressure when d days have passed since it was properly inflated.  How many days have passed if the tire’s inflation is approximately 11 psi? | | | |
|  | **A** | 3 | **C** | 15 |
|  | **B** | 8 | **D** | 24 |

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| **33** | Enrique was asked to solve the equation His steps are shown.  Step 1:  Step 2:  Step 3:  Step 4:  Which statement about his solution is correct? | | | |
|  | **A** | The problem is worked correctly at each step. | **C** | In Step 3 the problem should be |
|  | **B** | In Step 2 the problem should be | **D** | In Step 4 the problem should be |

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| **34** | Which equation is equivalent to 3(2m + 7) = −5(6 + m)? | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **35** | If what is the value of p? | | | |
|  | **A** | 7200 | **C** | –72 |
|  | **B** | 72 | **D** | –7200 |

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| **36** | Two hoses are used to fill a swimming pool. Together they fill the pool at a rate of 3 gallons every 5 seconds. An equation representing this is where t is the time in seconds and g is the number of gallons. About how many hours will it take to fill the pool if it holds 80,000 gallons? | | | |
|  | **A** | 4 | **C** | 13 |
|  | **B** | 7 | **D** | 37 |

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| **37** | A pair of linear equations is graphed below.  Which values for x and y would satisfy both of these equations? | | | |
|  | **A** | x = 0, y = 3 | **C** | x = 4, y = 3 |
|  | **B** | x = 3, y = 4 | **D** | x = 3, y = 7 |

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| **38** | A system of linear equations is graphed below.    Which coordinate point represents the solution? | | | |
|  | **A** | (0, 4) | **C** | (0, – 4) |
|  | **B** | (4, 0) | **D** | (4, – 4) |

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| **39** | Terry sold 30 cans of paint at a total cost of $425. A can of paint holding one quart cost $10 each. A can of paint holding one gallon cost $15 each. The equations and graph below can be used to determine the number of cans of paint Terry sold, where x represents the number of quarts of paint, and y represents the number of gallons of paint.  Number of cans:  Total cost of cans:    How many quart and gallon cans of paint did Terry sell? | | | |
|  | **A** | 5 quarts, 25 gallons | **C** | 25 quarts, 5 gallons |
|  | **B** | 15 quarts, 15 gallons | **D** | 42 quarts, 28 gallons |

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| **40** | For a recycling project Max and Arlene collected aluminum cans over 5 weeks. The graph below shows the total number of cans each collected over the 5-week project.  In which week did Max and Arlene have the same number of cans? | | | |
|  | **A** | Week 2 | **C** | Week 10 |
|  | **B** | Week 4 | **D** | Week 14 |

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| **41** | What ordered pair represents the solution to this system of linear equations? | | | |
|  | **A** |  | **C** |  |
|  | **B** |  | **D** |  |

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| **42** | What is the y-coordinate of the ordered pair that satisfies this system of linear equations? | | | |
|  | **A** | 2 | **C** | –1 |
|  | **B** | 1 | **D** | –2 |

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| **43** | An apartment building contains 100 units. The one-bedroom units rent for $495 per month and the two-bedroom units rent for $600 per month. When all the units are rented out, the total monthly rent paid by the tenants is $55,275. How many two-bedroom apartments are there? | | | |
|  | **A** | 45 | **C** | 55 |
|  | **B** | 50 | **D** | 66 |

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| **44** | Sports Warehouse had a sale on two models of baseball gloves. Model A sold for $30.00, and model B sold for $45.25. A total of 52 gloves was sold. The total amount of sales earned on the gloves, excluding tax, was $2,078.50. How many model B baseball gloves were sold? | | | |
|  | **A** | 18 | **C** | 29 |
|  | **B** | 22 | **D** | 34 |

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| **45** | Jeremy plays basketball for the Varsity team. Last season, he scored a total of 1489 points consisting of 2-point and 3-point baskets. If Jeremy made a total of 640 baskets, how many of the baskets counted 3 points? | | | |
|  | **A** | 209 | **C** | 1227 |
|  | **B** | 431 | **D** | 1489 |

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| **46** | The length of a rectangle is 16 inches longer than its width. If the perimeter of the rectangle is 540 inches, what is the length in inches? | | | |
|  | **A** | 111 | **C** | 135 |
|  | **B** | 127 | **D** | 143 |