**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date Due:**

**Algebra 1 Regents Review Packet #5**

***Directions:*** *Choose the best answer.  Answer ALL questions. Show ALL work in column 2.* ***If there is no mathematical work to be shown, write an explanation or definition to support your answer!***

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| 1) The Utica Boilermaker is a 15-kilometer road race. Sara is signed up to run this race and has done the following training runs:  I. 10 miles  II. 44,880 feet  III. 15,560 yards  Which run(s) are at least 15 kilometers?   1. I, only 3. I and III 2. II, only 4. II and III |  |
| 1. Andy has $310 in his account. Each week, w, he withdraws $30 for his expenses. Which expression could be used if he wanted to find out how much money he had left after 8 weeks? 2. 310 − 8w 3. 280 + 30(w − 1) 4. 310w – 30 5. 280 − 30(w – 1) |  |
| 1. What is the product of 2x + 3 and 4x2 − 5x + 6?    1. 8x3 − 2x2 + 3x + 18    2. 8x3 − 2x2 − 3x + 18    3. 8x3 + 2x2 − 3x + 18    4. 8x3 + 2x2 + 3x + 18 |  |
| 1. What is the solution to 2h + 8 > 3h − 6? 2. h < 14 3. h > 14 3. h <  4. h > |  |
| 1. Boyle’s Law involves the pressure and volume of gas in a container. It can be represented by the formula P1V1 = P2V2. When the formula is solved for P2, the result is 2. P1V1V2 3. V 2 over P 1 V 1 3. P 1 V 1 over V 2 4. P 1 V 2 over V 1 |  |
| 1. Firing a piece of pottery in a kiln takes place at different temperatures for different amounts of time. The graph below shows the temperatures in a kiln while firing a piece of pottery after the kiln is preheated to 200ºF. During which time interval did the temperature in the kiln show the greatest average rate of change? 2. 0 to 1 hour 3. 1 hour to 1.5 hours 4. 2.5 hours to 5 hours 5. 5 hours to 8 hours | |
| 1. How many of the equations listed below represent the line passing through the points (2, 3) and (4, −7)?   5x + y = 13  y + 7 = −5(x − 4)  y = −5x + 13  y − 7 = 5(x − 4)   1. 1 3. 3 2. 2 4. 4 |  |
| 1. If the domain of the function f(x) = 2x2 – 8 is {–2, 3, 5}, then the range is 2. {–16, 4, 92} 3. {–16, 10, 42} 3. {0, 10, 42} 4. {0, 4, 92} |  |
| 1. A satellite television company charges a one-time installation fee and a monthly service charge. The total cost is modeled by the function y = 40 + 90x. Which statement represents the meaning of each part of the function? 2. y is the total cost, x is the number of months of service, $90 is the installation fee, and $40 is the service charge per month. 3. y is the total cost, x is the number of months of service, $40 is the installation fee, and $90 is the service charge per month. 4. x is the total cost, y is the number of months of service, $40 is the installation fee, and $90 is the service charge per month. 5. x is the total cost, y is the number of months of service, $90 is the installation fee, and $40 is the service charge per month. |  |
| 1. If f(x) = x2 –  (x + 3), what is the value of f(8)?    1. 11 3. 17    2. 27 4. 33 |  |
| 1. Which system of equations has the same solution as the system below?   **2x + 2y = 16**  **3x −  y = 4**   1. 2x + 2y = 16 3. 2x + 2y = 16 6x − 2y = 4 6x − 2y = 8 2. x + y = 16 4. 6x − 6y = 48 3x − y = 4 6x + 2y = 8 |  |
| 1. The volume of a large can of tuna fish can be calculated using the formula *V* = π*r*2*h*. (4pts)   **PART A:** Write an equation to find the radius, *r*, in terms of *V* and *h*.  **PART B:** Determine the diameter, to the *nearest inch*, of a large can of tuna fish that has a volume of 66 cubic inches and a height of 3.3 |  |
| 1. Two friends went to a restaurant and ordered one plain pizza and two sodas. Their bill totaled $15.95. Later that day, five friends went to the same restaurant. They ordered three plain pizzas and each person had one soda. Their bill totaled $45.90. Write and solve a system of equations to determine the price of one plain pizza. [Only an algebraic solution can receive full credit.] (4pts) | |
| 1. The graph of an inequality is shown below. ( 6pts)   PART A: Write the inequality represented by the graph.  PART B: On the same set of axes, graph the inequality x + 2y < 4.  PART C: The two inequalities graphed on the set of axes form a system. Oscar thinks that the point (2, 1) is in the solution set for this system of inequalities. Determine and state whether you agree with Oscar. Explain your reasoning. | |
| 15)One of the factors of 4*x*2 – 9 is   1. (*x* + 3) 2. (2*x* + 3) 3. (4*x* – 3) 4. (*x* – 3) | |