**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 milesII. 44,880 feetIII. 15,560 yardsWhich 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 < $\frac{14}{5}$ 4. h > $\frac{14}{5}$
 |  |
| 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 = 13y + 7 = −5(x − 4)y = −5x + 13y − 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) = $\frac{1 }{2 }$x2 –  ($\frac{1}{4} $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 = 166x − 2y = 4 6x − 2y = 8
2. x + y = 16 4. 6x − 6y = 483x − 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 is1. (*x* + 3)
2. (2*x* + 3)
3. (4*x* – 3)
4. (*x* – 3)
 |