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

**Algebra 1 Regents Review Packet #8**

***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. Mrs. Allard asked her students to identify which of the polynomials below are in standard form and explain why.I. 15x4 − 6x + 3x2 − 1II. 12x3 + 8x + 4III. 2x5 + 8x2 + 10xWhich student’s response is correct?1. Tyler said I and II because the coefficients are decreasing.
2. Susan said only II because all the numbers are decreasing.
3. Fred said II and III because the exponents are decreasing.
4. Alyssa said II and III because they each have three terms.
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| 2.Which expression is a solution for the equation 2*x*2 – *x* = 7?1. https://www.castlelearning.com/Review/Courses/algebra/q1373-001.gif?v=20020530124212
2. https://www.castlelearning.com/Review/Courses/algebra/q1373-002.GIF?v=20020530124224
3. https://www.castlelearning.com/Review/Courses/algebra/q1373-003.gif?v=20020530124232
4. https://www.castlelearning.com/Review/Courses/algebra/q1373-004.gif?v=20020530124244
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| 3. Olivia entered a baking contest. As part of the contest, she needs to demonstrate how to measure a gallon of milk if she only has a teaspoon measure. She converts the measurement using the ratios below:https://cl.castlelearning.com/Review/Courses/math/q-150314.gif?v=20181211073542Which ratio is *incorrectly*written in Olivia’s conversion?1. 1. 4 Quarts to 1 Gallon 3. 2 pints to 1 quart
2. 2. a quarter cup to 4 tablespoons 4. 3 teapsoons to 1 tablespoon
 |  |
| 4.What is the solution to the inequality 2 + $\frac{4}{9}$ *x* ≥ 4 + *x*?1. *x* ≤  $\frac{-18}{5}$ 3. *x* ≥  $\frac{-18}{5}$
2. *x* ≤  $\frac{54}{5}$ 4. *x* ≥  $\frac{54}{5}$
 |  |
| 5.The solution to −2(1 − 4*x*) = 3*x*+ 8 is1. $\frac{6}{11}$ 3. $\frac{-10}{7}$
2. 2 4. −2
 |  |
| 6.Joy wants to buy strawberries and raspberries to bring to a party. Strawberries cost $1.60 per pound and raspberries cost $1.75 per pound. If she only has $10 to spend on berries, which inequality represents the situation where she buys *x*pounds of strawberries and *y*pounds of raspberries?* 1. 1.60*x* + 1.75*y ≤*10 3. 1.75*x* + 1.60*y* ≤ 10
	2. 1.60*x* + 1.75*y ≥*10 4. 1.75*x* + 1.60*y* ≥ 10
 |  |
| 7.Konnor wants to burn 250 Calories while exercising for 45 minutes at the gym. On the treadmill, he can burn 6 Cal/min. On the stationary bike, he can burn 5 Cal/min. If *t* represents the number of minutes on the treadmill and *b* represents the number of minutes on the stationary bike, which expression represents the number of Calories that Konnor can burn on the stationary bike?1. *b* 3.5*b*
2. 45 – *b* 4.250 − 5*b*
 |  |
| 8.Which point is a solution to the system below algebraically?*y <*−6*x*+ 42*y*< −12*x*+ 41. (1,$\frac{1}{2}$ ) 3. (−$\frac{1}{2}$ ,5)
2. (0,6) 4. (−3,2)
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| 9.The volume of a large can of tuna fish can be calculated using the formula *V* = π*r*2*h*.**PART A:** Write an equation to find the radius, *r*, in terms of *V* and *h*. | **10.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  |
| https://cl.castlelearning.com/Review/Courses/math/q148263.gif?v=20180416111638**11.PART A:** On the set of axes below, graph *f*(*x*) = |*x*– 3| + 2.Provide a table of values12.**PART B:**Describe the transformation from$ f(x)=$ $\left|x\right|$  |
| 13.Ms. Tod asked her class “Is the difference of 4.2 and the square root of 2 rational or irrational?” Patrick answered that the difference would be irrational. State whether Patrick is correct or incorrect. Justify your reasoning. |
| 14.Factor completely the expression 49*x*2 – 36  |  |
| 15.A construction worker needs to move 120 ft3 of dirt by using a wheelbarrow. One wheelbarrow load holds 8 ft3 of dirt and each load takes him 10 minutes to complete. One correct way to figure out the number of hours he would need to complete this job is1. 120 cubic feet per 1, times 1 minutes per 1 load, times 60 minutes per 1 hour, times 1 load per 8 cubic feet
2. 120 cubic feet per 1, times 60 minutes per 1 hour, times 8 cubic feet per 10 minutes, times 1 per 1 load
3. 120 cubic feet per 1, times 1 load per 10 minutes, times 8 cubic feet per 1 load, times 1 hour per 60 minutes
4. 120 cubic feet per 1, times 1 load per 8 cubic feet, times 10 minutes per 1 load, times 1 hour per 60 minutes
 |  |
| 16.Find the axis of symmetry algebraically: $$f(x)= x^{2}+3x+6$$17.Find the vertex:  |  |
| 18. A used car was purchased in July 2000 for $11,900. If the car depreciates 13% of its value each year, what is the value of the car, to the *nearest hundred dollar*s, in July 2003? |  |
| 19. The parents of twin boys started a college fund when the boys were 5 years old. They decided to invest $6,000 into an account that compounds quarterly at a rate of 8.6% annually. If the parents do not invest any additional money into this fund, how much will *each* of the boys have toward his education when they reach 18 years old? Use the formula: image, where *A* is the amount at the end of a specific length of time, *P* is the initial amount of the investment, *r* is the rate as a decimal and *t* is time. Round your answer to the *nearest cent*. |  |
| 20..Guy and Jim work at a furniture store. Guy is paid $185 per week plus 3% of his total sales in dollars, x, which can be represented by g(x) = 185 + 0.03x. Jim is paid $275 per week plus 2.5% of his total sales in dollars, x, which can be represented by f(x) = 275 + 0.025x. Determine the value of x, in dollars, that will make their weekly pay the same |  |