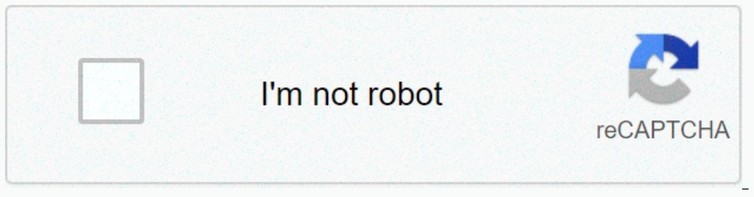

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Algebra 1 common core january 2016

January 2020 August 2019 June 2019 January 2019 June 2018 June 2018 August 2017 June 2017 January 2017 August 2017 August 2016 August 2016 January 2016 August 2015 June 2015 January 2014 June 2014 Last updated: 19. February 2020 High School Math based on the topics conducted for the Regents exam of NYSED. Below are the edited solutions for Algebra 1 (Common Core) Regents High School Examination January 2016. Related Topics: More Lessons for the Regents High School Exam More Lessons for Algebra The following questions from the past paper Regents High School Algebra 1 January 2016 exam (pdf). Scroll down the page to see the step-by-step solutions. Algebra 1 - January 2016 Regents - Questions and Solutions 1 - 12 1. In the function calculations. f(x) = (x - 2)2 + 4 the minimum value occurs when x is 2 The diagram below was created by an employee at a gas station. What statement can be justified with the diagram? (1) If 10 gallons of gas were purchased, 35 USD were paid. (2) For each gallon of gas purchased, USD 3.75 was paid. (3) For every 2 gallons of gas purchased, 5.00 USD were paid. (4) If zero gallons of gas were purchased, zero miles were driven. 3. For a recently released movie, the function y = 119.67(0.61)x models of revenue, y, in millions of dollars per week, x, for several weeks after its release. Based on the equation, how much more money, in millions of dollars, was earned in revenue for Week 3 than for Week 5? 4. Given the following expressions: What expressions result in an irrational number? 5. What inequality is represented by the following diagram? 6. Michael borrows money from his uncle, who calculates simple calculations for him. With formula I = Prt. To find out what the interest rate is, r, michael rearranges the formula to find r. His new formula is r equal to 7. Which equation corresponds to y - 34 = x(x - 12)? 8. Equation A = 1300(1.02)7 is used to calculate the amount of money in a savings account. What does 1.02 mean in this equation? 9. The zeros of the function f(x) = 2x2 - 4x - 6 are 10 If (2x - 3)2 of 5x2 is subtracted, the result is 11. Joe has a rectangular terrace that measures 10 feet by 12 feet. He wants calculations. to increase the area by 50% and plans to increase each dimension by equal lengths, x. What equation could be used to determine x? 12. If fully considered, x3 - 13x2 - 30x is Show Step-by-Step Solutions Algebra 1 - January 2016 Regents - Questions and Solutions 13 - 24 13. The following table shows the cost of sending a postcard in different years. During what time have the costs with the highest average rate 14. What equation is a step in the process when solving the equation x2 - 8x - 7 = 0 by completing the square? 15. A construction company uses the f(p) function, where p is the number of persons to model the amount of money it spends on completing a project. A reasonable domain for this function would be (1) positive integers (2) positive real numbers (3) both positive and negative whole cattle (4) both positive and negative real numbers 16. What function is shown in the following table? 17. What value of x makes h{1}{2}(x) = j(x)? 18. What recursively defined function does sequence 3, 7, 15, 31, ...provide? 19. The range of the function, defined as y = 5x, is 20. The diagram of y = f(x) is shown below. What is the chart of y = f(x + 1) - 2? 21. Which pair of equations could not be used to solve the following equations for x and y? 4x + 2y = 22 -2x + 2y = -8 22. The diagram that represents a function is shown below. What function has a minimum that is smaller than the one shown in the diagram? 23. Grisham examines the three situations below. Calculations. I. In the first 28 days, a sunflower grows at a speed of 3.5 cm per day. Ⅱ. The value of a car devalues by 15% per year after purchase. Iii. The amount of bacteria in a crop triples every two days during an experiment. Which of the statements describes a situation with an equal difference to the same interval? (1) I, only (3) I and III (2) II, only (4) II and III 24. After jackie performed analyses on a data set, he examined the scatter plot of the residual values for each analysis. Which scatter plot shows the best linear fit for the data? Show Step-by-step Solutions Algebra 1 - January 2016 Regents - Questions and Solutions 25 - 37 25. The t(x) function is shown in the following table. Determine whether t(x) is linear or exponential. Explain your answer. 26. Marcel claims that the following diagram is a function. Indicate whether Marcel is right. Justify your answer 27. Solve the equation for y (y - 3)2 = 4y - 12 28. The following graph shows the variation of the average temperature of the earth's surface from 1950 to 2000, according to a source. In which years did the temperature variation change the most per unit of time? Explain how you determined your answer. 29. The cost of belonging to a gym can be modelled according to C(m) = 50m + 79.50, where C(m) is the total cost of m months of membership. Enter the importance of slope and y-intercept of this feature in terms of the cost associated with gym membership. 30. A statistical class interviewed some students over lunch to get opinions on the preferences of television programmes. The results of the survey are summarised in the table below. Based on the sample, predict how of the 351 men of the school prefer dignity comedy. Justify your answer. 31. Since a > b, solve for x in relation to a and b: b(x - 3) ≥ ax + 7b 32. Jacob and Jessica study the spread of dandelions. Jacob discovers that growth over t weeks is due to the f(t) = (8) • 2t. Jessica notes that the growth function over t weeks is g(t) = 2t + 3. Calculate the number of dandelions Jacob and Jessica will have after 5 weeks each. Use the growth of both functions to explain the relationship between f(t) and g(t). 33. Let h(t) = 16t2 + 64t + 80 represent the height of an object above the ground after t seconds. Determine the number of seconds it takes to reach the maximum height. Justify your answer. Specify the time interval, in seconds, at which the height of the object decreases. Explain your reasoning. 34. Fred's teacher gave the class the square function f(x) = 4x2 + 16x + 9. a) State two different methods that Fred could use to solve the equation f(x) = 0. b) Solve f(x) = 0 for x until the next tenth using one of the methods specified in Part a. 35. Erica, the manager of Stellarbeans, collected data on daily high temperature and revenue from coffee sales. The data from nine days last autumn are shown in the table below. Specify the linear regression function f(t), which estimates the coffee sale of the day with a high temperature of t. Round all values to the nearest integer. Specify the correlation coefficient r of the data to the nearest hundredth. Does r indicate a strong linear relationship between the variables? Explain your reasoning. 36. A contractor has 48 meters of fences, which he will use as the perimeter of a rectangular garden. The length of one side of the garden is represented by x, and the area of the garden is 108 square meters. Determine the dimensions of the garden in meters. 37. Reel Good Cinema conducts a mathematical study. There are 200 seats in his theatre. Adult tickets cost USD 12.50 and children's tickets USD 6.25. The aim of the cinema is to sell tickets worth at least 1500 US dollars for the theater. Write a system of linear inequalities that can be used to find the possible combinations of adult tickets, x and children's tickets, y, that would meet the goal of cinema. 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