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What is the product of the following expression? ( ) A. B. C. D. 2. What is the product of the following expression? ( ) A. B. C. D. 3. Which is the simplified form of this expression? ( )( ) A. B. C. D. 4. In the diagram below, the dimensions of the large rectangle are ( ) by ( ) units. The dimensions of the cut-out rectangle are by units. Which choice expresses the area of the shaded region, in square units? A. – B. – C. – D. – 2016-2017 Algebra and Modeling – Teacher Packet 3 FSA Algebra 1 EOC Review 5. Given ( )( ) ( ) What are the values of , , and ? 2.9 1.9 -1.6 6. Which expression is equivalent to ( ) ( )? A. B. C. D. 7. Which expression is equivalent to ( )( ) A. B. C. D. 8. Under what operations is the system of polynomials NOT closed? A. Addition B. Subtraction C. Multiplication D. Division 2016-2017 Algebra and Modeling – Teacher Packet 4 FSA Algebra 1 EOC Review MAFS.912.A-CED.1.1 EOC Practice Level 2 Level 3 Level 4 Level 5 writes or chooses a one- writes or chooses a simple writes an exponential equation with employs the modeling variable linear equation or exponential (no horizontal or a horizontal or vertical translation or cycle when writing an inequality in a real-world vertical translation) or a a quadratic equation; identifies the equation context simple quadratic equation meaning of the variables 1. There are 60 students going on a field trip to the chocolate factory. The students are from three different classes. Mrs. Hooper's class has 24 students and Mr. Gomez's class has 18 students. Which of the equalities correctly describes the students and could be used to solve for how many students are from Mr. Anderson's class? (Let A = the number of students in Mr. Anderson's class.) A. B. C. – – D. 2. The ages of three friends are consecutively one year apart. Together, their ages total 48 years. Which equation can be used to find the age of each friend (where represents the age of the youngest friend)? A. B. ( )( ) C. ( ) ( ) D. ( ) ( ) a) What are the ages of the friends? A. B. C. D. 3. Student council is renting a tent for $350 for an upcoming student fair. Each student attending the fair will pay $0.50. All other attendees will pay $2.25 each. If 200 students attend the fair, which inequality can be used to determine the number of "other" attendees, , needed to cover the cost of the tent? A. ( )( ) B. ( )( ) C. ( )( ) D. ( )( ) 4. A farmer has a rectangular field that measures 100 feet by 150 feet. He plans to increase the area of the field by 20%. He will do this by increasing the length and width by the same amount, x. Which equation represents the area of the new field? A. ( )( ) B. 2( ) ( ) C. ( )( ) D. ( )( ) 2016-2017 Algebra and Modeling – Teacher Packet 5 FSA Algebra 1 EOC Review 5. A heart shaped chocolate box is composed of one square and two half circles. The total number of chocolates in the box is calculated by adding the area of a square given by and the area of a circle approximated by . The company plans to add a small additional box for a promotional campaign containing one row ( ) of chocolates. If the total combined heart shape and small box contain 69 chocolates, which of these equations could be utilized to solve for the number of chocolates in the small box ( )? A. B. – C. – D. – – 6. An internet business sells U.S. flags for $16.95 each, plus $2.50 shipping per flag. Shipping is free, however, on orders where more than $100.00 of flags are purchased. Which correctly shows the number of flags f that must be purchased to get free shipping? A. B. C. D. 7. A scientist is studying wildlife. She estimates the population of bats in her state to be 270,000. She predicts the population to grow at an average annual rate of 2.9%. Using the scientist's prediction, create an equation that models the population of bats, , after years. ( ) 8. Sandy programmed a website's checkout process with an equation to calculate the amount customers will be charged when they download songs. The website offers a discount. If one song is bought at the full price of $1.29, then each additional song is $.99. State an equation that represents the cost, , when songs are downloaded. ( ) or 9. Ian is borrowing $1000 from his parents to buy a notebook computer. He plans to pay them back at the rate of $60 per month. Ken is borrowing $600 from his parents to purchase a snowboard. He plans to pay his parents back at the rate of $20 per month. a) Write an equation that can be used to determine after how many months the boys will owe the same amount. b) Determine algebraically and state in how many months the two boys will owe the same amount. State the amount they will owe at this time. c) Ian claims that he will have his loan paid off 6 months after he and Ken owe the same amount. Determine and state if Ian is correct. Explain your reasoning. Ian will not be paid off 6 months after he and Ken owe the same amount. He will still owe money. Six months after 10 is 16 months, and ( ) . He will still owe $40 at 16 months, so he is not paid off. 2016-2017 Algebra and Modeling – Teacher Packet 6 FSA Algebra 1 EOC Review MAFS.912.A-REI.2.3 EOC Practice Level 2 Level 3 Level 4 Level 5 solves linear equations (with variable on solves linear equations and solves linear equations in solves linear equations one side and simple benchmark fractions inequalities in one variable, one variable, including and inequalities in one as the coefficient; may require the use of where the variable is equations where one variable, including the distributive property and adding like included on both sides of coefficient is represented equations with terms) and inequalities (with a variable the equal sign or inequality, by a letter and requires up coefficients represented on one side and positive coefficient that that require up to three to three steps to isolate the by letters that require up may include a simple benchmark fraction steps to isolate the variable variable; solves compound to four steps to isolate as the coefficient) in one variable with rational coefficients inequalities in one variable the variable 1. Solve for : ( ) A. B. C. D. 2. Solve for : ( ) ( ) ( ) A. B. C. D. 3. Solve: ( ) ( ) A. B. C. D. 4. Solve the following inequality for , showing all of your work carefully and completely. 5. What is the value of in the equation A. -16 B. 16 C. -4 D. 4 2016-2017 Algebra and Modeling – Teacher Packet 7 FSA Algebra 1 EOC Review 6. Fred solved the equation ( ) ( ) as shown. Fred made an error between Step 1 and Step 2. Part A: Explain the error Fred made. Instead of adding 4 to –42, Fred added 4 to 42 Part B: What is the correct solution to the original equation? The solution to the original equation is 2016-2017 Algebra and Modeling – Teacher Packet 8 FSA Algebra 1 EOC Review MAFS.912.A-CED.1.4 EOC Practice Level 2 Level 3 Level 4 Level 5 solves a literal linear equation solves a literal equation that solves a literal equation that solves a literal equation that in a real-world context for a requires two procedural steps requires three procedural requires four procedural steps variable whose coefficient is 1 steps 1. The formula for simple interest plus starting principal, where = amount, = principal, = interest rate per period, and = time, is given below. Which could be used to find the time, , if the amount, principal, and interest are known? A. B. C. D. 2. A line is represented by the equation .What is another way to represent the same line? A. B. C. D. 3. If , the value of in terms of , and can be expressed as A. B. C. D. 2016-2017 Algebra and Modeling – Teacher Packet 9 FSA Algebra 1 EOC Review 4. A formula is expressed as ( ). Express in terms of , and . A. B. C. D. 5. Tim was asked to solve the equation for . His solution is shown below. Start: Step 1: Step 2: ( ) Step 3: In which step did Tim make his first mistake when solving the equation? A. Step 1 B. Step 2 C. Step 3 D. Tim did not make a mistake. 6. Boyle's Law involves the pressure and volume of gas in a container. It can be represented by the formula . When the formula is solved for , the result is A. B. C. D. 2016-2017 Algebra and Modeling – Teacher Packet 10 FSA Algebra 1 EOC Review MAFS.912.A-CED.1.2 EOC Practice Level 2 Level 3 Level 4 Level 5 writes or chooses a two- writes or chooses a system of writes a system of linear equations or employs the modeling variable linear equation for linear equations or writes a single writes a single equation that has at cycle when writing a real-world context with equation that has at least three least three variables; correctly equations that have integral coefficients variables with integral coefficients identifies the meaning of the variables two variables 1. Kesha is planning to rent a van for her trip to Mt. Rainier. Two of her friends each rented the same type of van from the same car rental company last week. This is what they told her: John: "The cost of my rental was $240. The company charged me a certain amount per day and a certain amount per mile. I had the rental for five days and I drove it 200 miles." Katie: "The cost of my rental was only $100. I drove it for 100 miles and had it for two days." Kesha plans to get the same type of van that John and Katie had from the same car rental company. Kesha estimated her trip would be 250 miles, and she would have the vehicle for four days. Let = cost, = miles, and = days Which equation could Kesha use to figure out how much her rental would cost? A. B. C. D. 2. Eddie's Towing Company charges $40 to hook a vehicle to the truck and $1.70 for each mile the vehicle is towed. Which equation best represents the relationship between the number of miles towed, , and the total charges, ? A. B. C. D. 3. The local deli charges a fee for delivery. On Monday, they delivered two dozen bagels to an office at a total cost of $8. On Tuesday, three dozen bagels were delivered at a total cost of $11. Which system of equations could be used to find the cost of a dozen bagels, , if the delivery fee is ? A. B. C. D. 2016-2017 Algebra and Modeling – Teacher Packet 11 FSA Algebra 1 EOC Review 4. Max purchased a box of green tea mints. The nutrition label on the box stated that a serving of three mints contains a total of 10 Calories. a) On the axes below, graph the function, , where ( ) represents the number of Calories in mints. b) Write an equation that represents ( ). ( ) c) A full box of mints contains 180 Calories. Use the equation to determine the total number of mints in the box. 5. A shipping company charges $1.20 times the sum, , of the length, width, and height of a package to be shipped. All dimensions are measured in inches. The company also charges $3.00 for processing the package to be shipped. On the line below, write an equation that the shipping company can use for determining the cost, , for shipping any package. Equation: ( ) 6. A construction company spends weeks extending an existing road. The existing road is 5 miles long. Each week the company completes 0.2 miles of the extension. Which equation models the total length ( ) of the road over time? A. B. – C. D. 2016-2017 Algebra and Modeling – Teacher Packet 12 FSA Algebra 1 EOC Review MAFS.912.A-REI.3.5 EOC Practice Level 2 Level 3 Level 4 Level 5 identifies an equivalent system of identifies an equivalent system that identifies systems that justifies why multiple two equations in two variables that has a sum of the original as one of have the same equivalent systems has a multiple of one of the the equations and a multiple of the solutions would have the same equations of the original system other solution 1. The Smith Family Reunion and the Jones Family Reunion both include a visit to a family friendly amusement park in Florida. The Smith family pays $ 882.00 for passes for 10 adults and 18 children. The Jones family pays $ 951.00 for passes for 11 adults and 19 children. Which equation below can be used to solve for the price of the adult and child admissions? A. ( ) ( ) B. ( ) ( ) C. D. 2. Which system of equations has the same solution as the system below? A. B. C. D. 3. Without solving the systems, explain why the following systems must have the same solution. System (a): System (b): 4. Which pair of equations could not be used to solve the following equations for and ? A. B. C. D. 2016-2017 Algebra and Modeling – Teacher Packet 13 FSA Algebra 1 EOC Review MAFS.912.A-REI.3.6 EOC Practice Level 2 Level 3 Level 4 Level 5 solves a system of linear equations explains whether a system of equations solves a system of [intentionally approximately when given a graph of the has one, infinitely many, or no solutions; equations with rational left blank] system; solves a system of equations using solves a system of equations by graphing coefficients by elimination in the form of ax + by = c and or substitution (manipulation of equations graphing, substitution, dx + ey = f with integral coefficients, may be required) or elimination in the or elimination; where only one equation requires form of ax + by = c and dx + ey = f, where interprets solutions in a multiplication; solves a simple system of multiplication is required for both real-world context equations that require substitution equations 1. Sandy has a total of 35 coins in her money jar. If Sandy's jar contains only nickels and dimes and the value of all the coins is $2.50, how many nickels does Sandy have? A. B. C. D. 2. The enrollment at High School R has been increasing by 20 students per year. Currently High School R has 200 students attending. High School T currently has 400 students, but its enrollment is decreasing in size by an average of 30 students per year. If the two schools continue their current enrollment trends over the next few years, how many years will it take the schools to have the same enrollment? A. B. C. D. 3. What is the solution for the system of equations? – – A. ( ) B. ( ) C. ( ) D. ( ) 4. What is the -coordinate in the solution for the system of linear equations below? A. B. C. D. 2016-2017 Algebra and Modeling – Teacher Packet 14 FSA Algebra 1 EOC Review 5. In attempting to solve the system of equations and , John graphed the two equations on his graphing calculator. Because he saw only one line, John wrote that the answer to the system is the empty set. Is he correct? Explain your answer. No. Check students' explanations. 2016-2017 Algebra and Modeling – Teacher Packet 15 FSA Algebra 1 EOC Review MAFS.912.A-REI.4.12 EOC Practice Level 2 Level 3 Level 4 Level 5 identifies a solution region graphs solutions of the system of two linear verifies ordered pairs justifies why an when the graph of a linear inequalities and identifies the solution set as a as being a part of the ordered pair is a part inequality is given region of the coordinate plane that satisfies both solution set of a of a solution set inequalities; if the form is written in ax + by system of inequalities < c format, then a, b, and c should be integers 1. Which system of inequalities describes the graph? A. B. C. D. 2. Which quadrant will be completely shaded by the graph of the inequality ? A. Quadrant I B. Quadrant II C. Quadrant III D. Quadrant IV 2016-2017 Algebra and Modeling – Teacher Packet 16 FSA Algebra 1 EOC Review 3. Which is a graph of the solution set of the inequality A. B. C. D. 4. Which graph best represents the solution to this system of inequalities? { A. B. C. D. 2016-2017 Algebra and Modeling – Teacher Packet 17 FSA Algebra 1 EOC Review 5. Without graphing, which point is a solution to the system below? A. ( ) B. ( ) C. ( ) D. ( ) 2016-2017 Algebra and Modeling – Teacher Packet 18 FSA Algebra 1 EOC Review MAFS.912.A-CED.1.3 EOC Practice Level 2 Level 3 Level 4 Level 5 identifies constraints that are identifies variables; writes models constraints using a combination employs the constant values or simple constraints as a system of of linear equations/inequalities; modeling cycle when linear equations/inequalities linear inequalities or linear interprets solutions as viable or writing constraints in a real-world context equations nonviable based on the context 1. On the day of the field trip, each teacher must call the parents of any student who has not returned a permission slip. All of Mr. Gomez's students returned their permission slips, so he did not have to make any calls. Mrs. Hooper and Mr. Anderson had to call a total of eight parents. Mrs. Hooper needed to call two more students than Mr. Anderson. Which set of equations correctly describes the phone calls made? (Let H = Mrs. Hooper's calls and A = Mr. Anderson's calls.) A. B. C. D. 2. In a basketball game, Marlene made 16 fields goals. Each of the field goals were worth either 2 points or 3 points, and Marlene scored a total of 39 points from field goals. Part A Let represent the number of two-point field goals and represent the number of three-point field goals. Which equations can be used as a system to model the situation? Select ALL that apply. Part B How many three-point field goals did Marlene make in the game? Enter your answer in the box. 7 2016-2017 Algebra and Modeling – Teacher Packet 19 FSA Algebra 1 EOC Review 3. Justin plans to spend $20 on sports cards. Regular cards cost $3.50 per pack and foil cards cost $4.50 per pack. Which inequality shows the relationship between the number of packs of regular cards ( ) and the number of packs of foil cards ( ) Justin can afford to buy? A. B. C. D. 4. The amount of profit, , you earn by selling knives, , can be determined by: a) Determine the constraints on profit and the constraints on the number of knives sold. b) What happens to your profit as you sell more knives? Your profit will increase c) Is it possible to make a $14,000 profit? Explain. No, you cannot sell half of a knife, 72.5 5. 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. { 2016-2017 Algebra and Modeling – Teacher Packet 20 FSA Algebra 1 EOC Review MAFS.912.A-REI.1.1 EOC Practice Level 2 Level 3 Level 4 Level 5 chooses the correct chooses the correct explains and justifies the steps explains and justifies the steps justifications for the steps justifications for the steps in an in an equation of the form in an equation of the form a(bx in a two-step equation, equation of the form a(bx +c) = a(bx +c) = d or ax + b = cx + d, +c) = d(ex +f) , where a, b, c, d, ax + b = c d or ax + b = cx + d, where a, b, where a, b, c, and d are rational e, and f are rational numbers c, and d are integers numbers 1. State the missing steps and reasons to this solution of ( ) . a) ( ) b) Distributive Property c) d) e) f) Simplify g) h) i) j) 2. John's solution to an equation is shown below. Which property of real numbers did John use for Step 2? A. multiplication property of equality B. zero product property of multiplication C. commutative property of multiplication D. distributive property of multiplication over addition 2016-2017 Algebra and Modeling – Teacher Packet 21 FSA Algebra 1 EOC Review 3. Which equations illustrate the zero property of multiplication? Select ALL that apply. ( ) For questions 4 and 5, use the solution to the equation (–) below. Start: (–) Step 1: – Step 2: – Step 3: Step 4: 4. In Step 1, the multiplication property of equality was applied. True False 5. In Step 3, the addition property of equality was applied. True False 6. Use the steps in the table to answer the question. The table shows the first 5 steps used to solve an equation. Which statement is an incorrect explanation of one step in the process? A. From step 4, apply the subtraction property of equality to and to get . B. From step 3, apply the distributive property to ( ) to get in step 4. C. From step 2, apply the distributive property to ( ) and to get ( ) in step 3. D. From step 1, apply the subtraction property of equality to and to get ( ) in step 2. 2016-2017 Algebra and Modeling – Teacher Packet 22 FSA Algebra 1 EOC Review MAFS.912.A-REI.2.4 EOC Practice Level 2 Level 3 Level 4 Level 5 solves quadratic equations of the solves quadratic equations of the form solves quadratic equations of the form determines if a quadratic will yield form , where and , where , , and , where , , , and complex solutions; derives the are rational numbers by simple are integers by completing the square, are integers and is an even integer; quadratic formula inspection or by taking square factoring, or using the quadratic recognizes that a quadratic can yield roots formula; validates why taking the square nonreal solutions and that the quadratic root of both sides when solving a formula is used to find complex solutions; quadratic will yield two solutions completes steps in the derivation of the quadratic formula 1. What is the solution set of the equation ( )( ) ? A. and B. and C. and D. and – 2. Janice is asked to solve . She begins the problem by writing the following steps: Line 1 Line 2 Line 3 ( )( ) Use Janice's procedure to solve the equation for . Explain the method Janice used to solve the quadratic equation. ( )( ) ( )( ) Janice substituted for , resulting in a simpler quadratic. Once factored, Janice substituted for 3. Which value of is a solution to the equation ? A. B. C. D. 4. The method of completing the square was used to solve the equation . Which equation is a correct step when using this method? A. ( ) B. ( ) C. ( ) D. ( ) 2016-2017 Algebra and Modeling – Teacher Packet 23 FSA Algebra 1 EOC Review 5. An equation is shown. What values of make the equation true? 3 -0.5 6. Shannon and Jermaine are solving quadratic equations. This table shows their work. Both Shannon and Jermaine have errors in their work. Write a clear explanation of each student's error. Provide the correct solutions for both equations. Shannon Correct solution(s): Explanation of error: Shannon's error is after step 4. She should have separated the equations out such that or . Then solve both for . Therefore, or . Jermaine Correct solution(s): Explanation of error: Jermaine's error is after step 2. He should have taken the square root of 36 instead of dividing it by 2. Step 3 could be ( )( ) which gives or . Therefore, or . 2016-2017 Algebra and Modeling – Teacher Packet 24 FSA Algebra 1 EOC Review MAFS.912.A-REI.4.11 EOC Practice Level 2 Level 3 Level 4 Level 5 determines an integral solution for determines a completes an explanation explains how to find an approximate f(x) = g(x) given a graph or a table of solution to the on how to find an solution to the nearest tenth for f(x) a linear, quadratic, or exponential nearest tenth for f(x) approximate solution to the = g(x) given a graph or a table and function, in a mathematical or real- = g(x) given a graph nearest tenth for f(x) = g(x) justifies why the intersection of two world context or a table given a graph or a table functions is a solution to f(x) = g(x) 1. The system and is graphed as shown. Which choice is the point of intersection? A. ( ) B. ( ) C. ( ) D. ( ) 2. At which point do the two equations and intersect? A. ( ) B. ( ) C. ( ) D. ( ) ( ) 2016-2017 Algebra and Modeling – Teacher Packet 25 FSA Algebra 1 EOC Review 3. Use the graph below: y y = f(x) x y = g(x) y = h(x) If ( ) ( ) and ( ) ( ) , what is ( ) ( )? A. -3 B. 0 C. 3 D. 4 For questions 4and 5, use the table below. -4 -3 -2 -1 0 1 ( ) -23 -10 -3 -2 -7 -18 ( ) -13 -11.5 -10 -8.5 -7 -5.58 4. ( ) ( ) at ( ) True False 5. ( ) ( ) somewhere on the interval . True False 2016-2017 Algebra and Modeling – Teacher Packet 26 FSA Algebra 1 EOC Review MAFS.912.A-REI.4.10 EOC Practice Level 2 Level 3 Level 4 Level 5 distinguishes between coordinates distinguishes between coordinates recognizes that a graph is justifies that a graph is that are solutions to linear that are solutions to equations in the set of all the solutions the set of all the solutions equations in two variables and two variables (quadratic or of a given equation of an equation those that are not exponential) and those that are not 1. The ordered pairs ( )( ), and ( ) are points on the graph of a linear equation. Which of the following graphs show all of the ordered pairs in the solution set of this linear equation? A. B. C. D. 2. Dr. Math thinks he knows more than you about what is true and false world just because he's a doctor. He says that the equation also includes the point ( ). Is Dr. Math right or wrong? A. He's right B. He's wrong C. We need more information before we can say if he's right or wrong D. None of the above 2016-2017 Algebra and Modeling – Teacher Packet 27 FSA Algebra 1 EOC Review 3. You talk on the phone minutes on day of every month according to the equation . The cell phone company claims you talked 12 minutes on the phone on the fourth day of the month. Are they right? A. Yes, you did talk on the phone for 12 minutes on the fourth of the month B. No, you talked on the phone for 7 minutes on the fourth of the month C. No, you talked on the phone for 9 minutes on the fourth of the month D. No, you talked on the phone for 15 minutes on the fourth of the month 4. The speed of a snowboarder from uphill to downhill can be modeled using the equation where is in minutes. The snowboarder's speed at time 0 is 1 and is 2 at time 1. The snowboarder claims that this proves his speed increases linearly. Is he right? A. Yes, because two points are needed to define a line B. No, because the equation is not linear C. No, because the two points have positive values only D. No, because it does not cross the -axis 5. Which point is NOT on the graph represented by ? A. (-4, 0) B. (-1, 9) C. (2, 0) D. (4, 0) 6. An equation is shown. Select All of the points that are solution to the equation above. ( ) ( ) ( ) ( ) ( ) 2016-2017 Algebra and Modeling – Teacher Packet 28 FSA Algebra 1 EOC Review MAFS.912.A-SSE.2.3 EOC Practice Level 2 Level 3 Level 4 Level 5 uses properties of factors the difference of two factors the difference of two squares with a explains the exponents (one squares with a degree of 2 and common integral factor, trinomials with a differences operation) and trinomials with a degree of 2 and common integral factor and a leading coefficient between identifies the new explains the properties of the having more than four factors and explains the equivalent forms base of an zeros; completes the square properties of the zeros; completes the square and why an exponential function; when the leading coefficient is 1 when the leading coefficient is greater than 1 equivalent form explains the and explains the properties of the and explains the properties of the maximum or would provide the properties of the in maximum or minimum; uses the minimum; transforms exponential functions that required property in a real- properties of exponents and have more than one operation and explains the world context names the new rate properties of expression 1. The director of a play must decide how much to charge per ticket. If tickets cost c dollars each, a total of (755c) people will attend the play. Which ticket price will generate the most income? A. $1.00 B. $7.50 C. $15.00 D. $20.50 2. Which of these shows the following expression factored completely? A. ( )( ) B. (( ) C. ( )( ) D. ( )( ) 3. If ( ) , which statement regarding the vertex form of ( ) is true? A. In vertex form, ( ) ( ) and therefore has a minimum value of 1. B. In vertex form, ( ) ( ) and therefore has a minimum value of 2. C. In vertex form, ( ) ( ) and therefore has a minimum value of 4.5. D. In vertex form, ( ) ( ) and therefore has a minimum value of 2. 4. Which expression is equivalent to ? A. ( )( ) B. ( )( ) C. ( )( ) D. ( )( ) 2016-2017 Algebra and Modeling – Teacher Packet 29 FSA Algebra 1 EOC Review 5. What number should be added to both sides of the equation to complete the square in A. 4 B. 16 C. 29 D. 49 6. If ( ) is a factor of what is the value of ? A. -21 B. -7 C. 7 D. 28 7. In the equation ( ) , the minimum value occurs when is A. -2 B. 2 C. -4 D. 4 8. A computer application generates a sequence of musical notes using the function ( ) ( ) , where is the number of the note in the sequence and ( ) is the note frequency in hertz. Which function will generate the same note sequence as ( )? A. ( ) ( ) B. ( ) ( ) C. ( ) ( ) D. ( ) ( ) 2016-2017 Algebra and Modeling – Teacher Packet 30 FSA Algebra 1 EOC Review MAFS.912.A-SSE.1.1 EOC Practice Level 2 Level 3 Level 4 Level 5 interprets coefficients or terms of interprets factors of interprets more than one given an interpretation, exponential and quadratic exponential and quadratic part of an expression chooses the correct part of expressions in a real-world context expressions the expression 1. Combined estimates for Etosha National Park and the Northwestern Population Year Base Year Estimated Number of Elephants 1998 3 3,218 2000 5 3,628 2002 7 3,721 2004 9 3,571 The elephant population in northwestern Namibia and Etosha National Park can be predicted by the expression ( ) , where b is the number of years since 1995. What does the value 2,649 represent? A. the predicted increase in the number of elephants in the region each year B. the predicted number of elephants in the region in 1995 C. the year when the elephant population is predicted to stop increasing D. the percentage the elephant population is predicted to increase each year 2. A store manager begins each shift with the same total amount of money. She keeps $200 in a safe and distributes the rest equally to the 5 cashiers in the store. This situation can be represented by the function ( ) . What does the variable represent in this situation? A. The total amount of money the manager has at the beginning of a shift B. The total amount of money the manager has at the end of a shift C. The amount of money each cashier has at the beginning of a shift D. The amount of money each cashier has at the end of a shift 3. A satellite television company charges a one-time installation fee and a monthly service charge. The total cost is modeled by the function . Which statement represents the meaning of each part of the function? A. is the total cost, is the number of months of service, $90 is the installation fee, and $40 is the service charge per month. B. is the total cost, is the number of months of service, $40 is the installation fee, and $90 is the service charge per month. C. is the total cost, is the number of months of service, $40 is the installation fee, and $90 is the service charge per month. D. is the total cost, is the number of months of service, $90 is the installation fee, and $40 is the service charge per month. 2016-2017 Algebra and Modeling – Teacher Packet 31 FSA Algebra 1 EOC Review 4. A ball was thrown upward into the air. The height, in feet, of the ball above the ground t seconds after being thrown can be determined by the expression . What is the meaning of the in the expression? Select the correct answer. A. The ball takes 3 seconds to reach its maximum height. B. The ball takes 3 seconds to reach the ground. C. The ball was thrown from a height of 3 feet. D. The ball reaches a maximum height of 3 feet. 5. Is the equation ( ) a model of exponential growth or exponential decay, and what is the rate (percent) of change per time period? A. exponential growth and 12% B. exponential growth and 88% C. exponential decay and 12% D. exponential decay and 88% 6. A car leaves Albany, NY, and travels west toward Buffalo, NY. The equation can be used to represent the distance, , from Buffalo after hours. In this equation, the 59 represents the A. car's distance from Albany B. speed of the car C. distance between Buffalo and Albany D. number of hours driving 7. Juan buys peaches and grapefruit at the store. He writes the equations shown to model the relationship between the number of pounds of peaches, , and the number of pounds of grapefruit, , that he buys. What is the total number of pounds of peaches and grapefruit that Juan buys? 2.5 pounds 8. Omar deposited d dollars into a savings account y years ago. Now he is going to use a portion of the money in his savings account to buy a bicycle. This expression can be used to find the percentage of the money in the savings account that Omar will use for the bicycle. ( ) What is the meaning of the denominator in the expression? A. the amount Omar will pay for the bicycle B. the amount in Omar's savings account now C. the yearly interest rate for the savings account D. the amount originally deposited in the savings account 2016-2017 Algebra and Modeling – Teacher Packet 32 FSA Algebra 1 EOC Review MAFS.912.A-SSE.1.2 EOC Practice Level 2 Level 3 Level 4 Level 5 works with expressions with factors the difference of two factors the difference of two factors the difference of two only monomial factors and squares with a degree of 2, squares with a common squares with a degree of 4 chooses the correct trinomials with a degree of 2 integral factor, trinomials with with or without a common equivalent forms of a whose leading coefficient has a common integral factor and integral factor, and a trinomial whose leading no more than 4 factors a leading coefficient with more polynomial with a degree of 3 coefficient is 1 than four factors and a leading coefficient of 1 1. Students were asked to write a trinomial that could not be factored using integers. Which student followed the given directions? A. Pat B. Sam C. Mel D. Lee 2. Identify ALL the factors of this polynomial when it is factored completely. 3. Which expression is equivalent to A. ( )( ) B. ( )( ) C. ( )( ) D. ( )( ) 2016-2017 Algebra and Modeling – Teacher Packet 33 FSA Algebra 1 EOC Review 4. Four expressions are shown below. I ( ) II ( ) III ( )( ) IV ( ) The expression is equivalent to A. I and II, only B. II and IV, only C. I, II, and IV D. II, III, and IV 5. Which of these shows the following expression factored completely? A. ( )( ) B. ( )( ) C. ( )( ) D. ( )( ) 6. Select all the expressions that are equivalent to ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )( ) 2016-2017 Algebra and Modeling – Teacher Packet 34 0 ratings0% found this document useful (0 votes)44 viewsThe document is a review packet for the FSA Algebra I End-of-Course exam, containing practice problems and answer keys for various algebra topics. It includes sections on polynomial operatio… SaveSave MAFS A1 EOC Review Algebra and Modeling - Answer K... For Later0%0% found this document useful, undefined