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Reddit and its partners use cookies for a smoother experience. By accepting all cookies, you agree to their use in delivering services, personalizing content, and measuring ad effectiveness. Rejecting all cookies may still ensure platform functionality. For more information, check the Cookie Notice and Privacy Policy. Let's break down what an equation is. If we look at its parts, 'equal' sounds similar to equal. So, an equation is essentially anything with an equals sign; it's a statement of equality between two variables. We can form equations from wordy questions involving variable equality and solve them to find unknown values. In math, deriving refers to forming a mathematical equation or formula to help us work something out. Below, we'll be deriving equations and solving them to find unknown quantities. A variable is a letter or symbol representing an unknown value; it can be x, y, or any other symbol that represents an unknown quantity. To derive an equation, first define your variables by establishing what you're trying to solve. For example, if the question asks for someone's age, define their age as a letter like 'x.' If it's about cost, define cost as a variable like 'c.' Next, identify where the equals sign goes. This might be explicitly stated in the question or require some imagination. We often know quantities are equal when we see statements like "the sum of angles on a straight line is 180 degrees" or "parallel sides are equal." Let's go through examples and practice deriving equations for different types of questions. 1. We can say  $2a+3+90+6a-1=180$ . By collecting like terms, we can simplify this to  $8a+92=180$ . Thus, we have just derived an equation! Now we can solve this equation to work out what a is, and plug this into the missing angles to identify the size of each of the angles. Subtracting 92 from both sides, we get  $8a=88$ . Finally, dividing both sides by 8, we get  $a=11$ . Thus, angle ABE= $2\times 11+3=25^\circ$ , angle EBD is 90 degrees, and angle DBC= $6\times 11-1=65^\circ$ . Answering the original question, angle DBC is 65 degrees. Equations Examples- perimeter of triangle and square, Jordan Madge- Vaia Originals Solution: The perimeter of the triangle is  $7x+3$ , while the perimeter of the square is  $20x$ . Since the square's perimeter is twice that of the triangle, we get  $14x+6=20x$ . Subtracting  $14x$  from both sides gives us  $6=6x$  and dividing by six yields  $x=1$ . Thus, the length of the square is five units and its area is 25 unit<sup>2</sup>Catherine is 27 years old. Her friend Katie is three years older than Sophie. Jake is twice as old as Sophie. The sum of their ages is 90. Work out their ages: We start by defining Sophie's age to be x, which means Katie's age is  $x+3$  and Jake's age is  $2x$ . Since the sum of their ages equals 90, we get  $27+x+x+3+2x=90$ . Simplifying, we get  $4x+30=90$ , then subtracting 30 from both sides gives us  $4x=60$  and dividing by four yields  $x=15$ . Thus, Sophie is 15 years old, making Katie's age 18 years old.The cost of a tablet is £x. A computer costs £200 more than a tablet. The price of the tablet and computer together is £2000. Work out the cost of the tablet and computer: We first define the tablet as costing x pounds. Since the computer costs £200 more, its cost is  $x+200$ . Since both the tablet and computer together cost £2000, we get  $x+x+200=2000$ . Simplifying gives us  $2x+200=2000$ , then subtracting 200 from both sides yields  $2x=1800$  and dividing by two gives  $x=900$ . Thus, the tablet costs £900 and the computer costs £1100.Annabelle, Bella, and Carman each play some dominoes games. Annabelle won 2 more games than Carman. Bella won 2 more games than Annabelle. Altogether they played 12 games, with a winner in every game. How many games did each of them win? Define the number of games Carman won as x. Thus, Annabelle won  $x+2$  games and Bella won  $x+2+2$  games. Since there was a winner in every game, we get  $x+x+2+x+4=12$ . Simplifying gives us  $3x+6=12$ , then subtracting six from both sides yields  $3x=6$  and dividing by three gives  $x=2$ . Therefore, Annabelle won 4 games, Bella won 6 games, and Carman won 2 games.An equation is a statement with an equal sign. In mathematics, forming a mathematical equation or formula is called deriving.We can derive equations We have discovered that two quantities are equal, and now we can solve for an unknown variable by deriving an equation. Deriving an equation means creating a mathematical expression that helps us find a specific value or quantity. For example, let's say we know that a multipack of beans costs £1 and comes in packs of four. We want to find the cost of each tin of beans, represented by the variable x. By deriving the equation  $4x = 1$ , we can solve for x and determine that each tin of beans costs 25p. Expression  $2x + 9$  can be broken down into its components: x is an unknown value, 9 is a constant, and 2 is the coefficient of x. A variable is a symbol with an unknown value, while a constant has a fixed numerical value. The number multiplied by a variable is called its coefficient. In the expression  $5y + z$ , the coefficient of y is 5 and the coefficient of z is 1. A term can be a single variable, a number, or a product of variables. These are called factors, and when combined, they form an expression. To simplify an algebraic expression, we first group like terms together and then add or subtract them as needed. For example, if we have  $(2x - 6x) + (4y + 3y) + (5{3xy}^2) - (8xy^2)$ , we can combine the like terms to get  $(2x - 6x) + 7y + (5{3xy}^2) - (8xy^2)$ . When simplifying an algebraic expression, there are several steps that may be necessary. First, we need to multiply and divide expressions as needed. For example, if we have two expressions  $(2x + 10)$  and  $(\frac{x-4}{2})$ , we can multiply them together by multiplying each term of the first expression by each term of the second expression. When dividing expressions, we need to factor the numerator and denominator, cancel out any common factors, and then simplify the rest. For example, if we have two expressions  $2x + 10$  and  $(\frac{x-4}{2})$ , we can divide them by finding a common factor of 2. Finally, there are some general formulas that can be used to simplify algebraic expressions more easily. These formulas include the square of a binomial  $(a^2+2ab+b^2)$  and the cube of a binomial  $(a^3+3a^2b+3ab^2+b^3)$ . In terms of identifying polynomials, some examples are:  $* 4 - 5x + 2y$ : trinomial expression (not a polynomial)  $* 2x + 5 - 2(x + 2) - 1$ : not a polynomial  $* (4-7x^2)+5+2x^2$ : binomial expression (not a polynomial) I hope this paraphrased version helps! The original expression is a polynomial and can be simplified by combining like terms. The process involves identifying the like terms and combining them. For the first expression,  $(\frac{9x^2}{15x^3})$ , we can simplify it by finding common factors between the numerator and denominator. This simplifies to  $(\frac{3y}{5x})$ . The second expression,  $(6x^2y+4x^2-3x^2y-2x^2)$ , can be simplified by combining like terms. This involves adding and subtracting the coefficients of the like terms, resulting in  $(3x^2y+2x^2)$ . The third expression,  $(x + 5)(x - 4)$ , is a product of two binomials. We can simplify it by multiplying the two binomials together and combining like terms. This results in  $(x^2-4x+5x-20)$ , which simplifies to  $(x^2+x-20)$ . The last section deals with adding and subtracting algebraic expressions. For example, we can add  $3x + 7$  and  $x + 2y + 9$  by combining like terms. This results in  $4x + 2y + 16$ . We can also add or subtract polynomials, such as  $(7x^2+3x+5)$  and  $(-3x^2+7x+y-9)$ .

What does derive an equation mean. How to derive an expression. What does it mean when an expression is defined. What is a derivation. Derive an expression meaning.