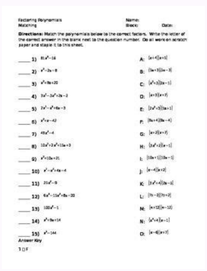
Factoring difference of two squares worksheet pdf

Factoring the Difference of Two Squares

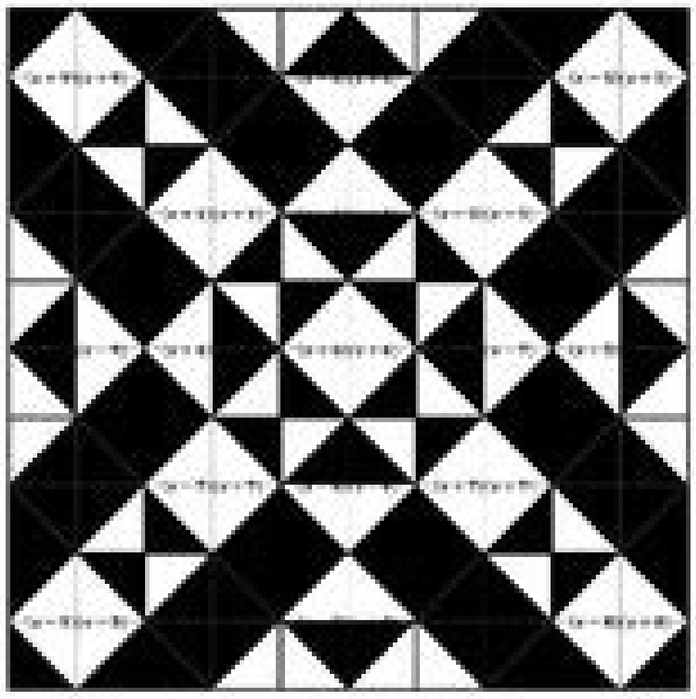
$$(a+b)(a-b) = a^2 - ab + ab - b^2 = a^2 - b^2$$

FORMULA: $a^2 - b^2 = (a+b)(a-b)$

The difference of two bases being squared, factors as the product of the sum and difference of the bases that are being squared.



Name _____ **Factoring Quadratic Expressions**



$x^2 - 4$
$(x-2)(x+2)$

$x^2 + 10x + 25$
$(x+5)(x+5)$

$x^2 - 6x + 9$
$(x-3)(x-3)$

$x^2 + 16x + 64$
$(x+8)(x+8)$

$x^2 - 36$
$(x-6)(x+6)$

$x^2 - 2x + 1$
$(x-1)(x-1)$

$x^2 + 6x + 9$
$(x+3)(x+3)$

$x^2 - 25$
$(x-5)(x+5)$

$x^2 + 18x + 81$
$(x+9)(x+9)$

$x^2 + 12x + 36$
$(x+6)(x+6)$

$x^2 - 81$
$(x-9)(x+9)$

$x^2 - 4x + 4$
$(x-2)(x-2)$

$x^2 - 10x + 25$
$(x-5)(x-5)$

$x^2 - 18x + 81$
$(x-9)(x-9)$

$x^2 - 49$
$(x-7)(x+7)$

$x^2 - 1$
$(x-1)(x+1)$

$x^2 + 14x + 49$
$(x+7)(x+7)$

$x^2 - 16x + 64$
$(x-8)(x-8)$

$x^2 - 12x + 36$
$(x-6)(x-6)$

$x^2 - 16$
$(x-4)(x+4)$

$x^2 - 9$
$(x-3)(x+3)$

$x^2 + 8x + 16$
$(x+4)(x+4)$

$x^2 + 2x + 1$
$(x+1)(x+1)$

$x^2 - 64$
$(x-8)(x+8)$

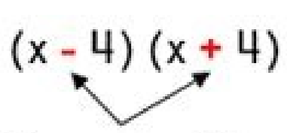
$x^2 - 14x + 49$
$(x-7)(x-7)$

difference of two squares: $a^2 - b^2 = (a - b)(a + b)$

use the difference of two squares to work out these calculations, without using a calculator:

1) $13^2 - 3^2$
2) $14^2 - 4^2$
3) $13^2 - 7^2$
4) $25^2 - 15^2$
5) $51^2 - 49^2$
6) $57^2 - 43^2$
7) $36^2 - 26^2$
8) $81^2 - 79^2$
9) $26^2 - 24^2$
10) $48^2 - 42^2$
11) $55^2 - 5^2$
12) $33^2 - 13^2$
13) $95^2 - 5^2$
14) $33^2 - 32^2$
15) $21^2 - 29^2$
16) $16^2 - 36^2$
17) $38^2 - 12^2$
18) $556^2 - 444^2$
19) $667^2 - 333^2$
20) $12345^2 - 12344^2$
21) $1.5^2 - 0.5^2$
22) $3.6^2 - 1.6^2$
23) $9.7^2 - 0.3^2$
24) $4.6^2 - 4.4^2$
25) $6.6^2 - 3.4^2$
26) $14.5^2 - 10.5^2$
27) $27.5^2 - 23.5^2$
28) $18.5^2 - 28.5^2$
29) $9.66^2 - 0.34^2$
30) $9.75^2 - 0.25^2$

try to write 55 as the difference between two square numbers – in two different ways



The only difference in the binomials is the + and – sign between the terms.

(x - 4) (x + 4)	Use the foil method to solve.
(x - 4) (x + 4) x^2	Multiply the First terms. (x) (x) = x^2
(x - 4) (x + 4) $x^2 + 4x$	Multiply the Outer terms. (x) (4) = 4x
(x - 4) (x + 4) $x^2 + 4x - 4x$	Multiply the Inner terms (-4) (x) = -4x
(x - 4) (x + 4) $x^2 + 4x - 4x - 16$	Multiply the Last terms (-4) (4) = -16
$x^2 + 4x - 4x - 16$ $x^2 - 16$	Combine like terms: 4x -4x = 0
$x^2 - 16$	Solution

What is difference of two squares. Factoring gcf and difference of two squares worksheet. Can you factor the sum of two squares. Factoring the difference of two squares and perfect square trinomials worksheet. Factoring difference of two squares worksheet pdf. Factoring difference of two squares worksheet doc. Factoring the difference of two perfect squares worksheet answers.

Worksheet on factoring the differences of two squares will help us to factorize an algebraic expression using the following identity a2 - b2 = (a + b) (a – b). 1. Factorize the following by taking the difference of squares: (i) x2 – 9 (ii) a2 – 1 (iii) 49 – x2 (iv) 4x2 – 25 (v) a2b2 – 16 (vi) a4 – b4 2. Factoring by the Difference of Two Perfect Squares: (i) 144a2 – 169b2 (ii) 1 – 0.09a2 (iii) 16x2 – 121 (iv) – 64a2 + (9/25) b2 (v) x4 – 256 (vi) (x + y)4 – z4 3. Factorize using the formula of differences of two squares: (i) 36a2 – b2 (ii) x2y2 – 16 (iii) 9a4b4 – 25p4q4 (iv) x4 – 256 (v) 81x2 – 49y2 (vi) x2 – (y – z)2 4. Factor the difference of two perfect squares: (i) 16m2 – (3n + 2y)2 (ii) (3a + 4b)2 - (4b + 5b)2 (iii) (x + y)2 - (x – y)2 (iv) 50p2 – 72q2 (v) a4 - (b + c)4 (vi) m2 - 1/169 5. Factor each expression as a difference between two squares: (i) 9 (x + y)2 - 4 (x – y)2 (ii) 16/49 - 25p2 (iii) 9xy2 – x3 (iv) 4 (3x + 1)2 - 9 (x – 2)2 (v) 1 - 121a2 (vi) 169p2 - 1 6. Factor using the identity: (i) 1 - (a + b)2 (ii) x2y2 - 25/z2 (iii) x12y4 - x4y12 (iv) 100 (x – y)2 – 121 (a + b)2 (v) 2x – 50x3 (vi) 25/x2 - (4x2)/9 (vii) x4 - 1/(y4) (viii) 75x3y2 – 108xy4 Answers for the worksheet on factoring the differences of two squares are given below to check the exact answers of the above factorization. Answers: 1. (i) (x + 3) (x - 3) (ii) (a + 1) (a - 1) (iii) (7 + x) (7 - x) (iv) (2x + 5) (2x - 5) (v) (ab + 4) (ab - 4) (vi) (a2 + b2) (a + b) (a - b) 2. (i) (12a + 13b) (12a - 13b) (ii) (1 + 0.3a) (1 - 0.3a) (iii) (4x + 11) (4x - 11) (iv) [(3/5)b + 8a] [(3/5)b - 8a] (v) (x2 + 16) (x + 4) (x – 4) (vi) [(x + y)2 + z2] (x + y + z) (x + y - z) 3. (i) (6a + b) (6a - b) (ii) (xy + 4) (xy - 4) (iii) (3a2b2 + 5p2q2) (3a2b2 - 5p2q2) (iv) (x2 + 16) (x + 4) (x - 4) (v) (9x + 7y) (9x - 7y) (vi) (x + y - z) (x – y + z) 4. (i) (4m + 3n + 2y) (4m - 3n - 2y) (ii) (3a + 8b + 5d) (3a – 5d) (iii) 4xy (iv) 2(5p + 6q) (5p - 6q) (v) (a2 + b2 + c2 + 2bc) (a + b + c) (a – b - c) (vi) (m + 1/13) (m - 1/13) 5. (i) (5x + y) (x + 5y) (ii) (4/7 + 5p) (4/7 - 5p) (iii) x(3y + x) (3y - x) (iv) (9x – 4) (3x + 8) (v) (1 + 11a) (1 - 11a) (vi) (13p + 1) (13p - 1) 6. (i) (1 + a + b) (1 – a - b) (ii) (xy + 5/z) (xy - 5/z) (iii) x4y4 (x4 + y4) (x2 + y2) (x + y) (x – y) (iv) (10x - 10y + 11a + 11b) (10x - 10y - 11a - 11b) (v) 2x (1 + 5x) (1 - 5x) (vii) (x2 + 1/y2) (x + 1/y) (x - 1/y) (viii) 3xy2 (5x + 6y) (5x - 6y) 8th Grade Math PracticeMath Homework Sheets From Worksheet on Factoring the Differences of Two Squares to HOME PAGE Didn't find what you were looking for? Or want to know more information about Math Only Math. Use this Google Search to find what you need. Share this page: What's this? Most homeowners and renters rarely use a square. However, woodworkers, carpenters, and builders use them frequently. Selecting the right one for the job is easy. What a Square Does The main purpose of a square is to ensure that components are perpendicular, or at right angles to each other. In addition, most squares serve as measurement rulers marked in inches, fractional inches, and sometimes in centimeters and millimeters. Large framing squares, also called carpenter squares, are used in building cabinets and homes. Speed squares, sometimes referred to as try squares, are smaller and include additional angles for measurement. Combination squares have a ruler blade with an adjustable sliding stock to measure 90-degree and 45-degree angles. Combination squares include a built-in bubble level that is useful for leveling small components such as picture frames. How to Safely Use a Square A combination square is easy to use. Lay the stock against an object edge, then use the nut to loosen and move the ruler as needed. Most combination squares also have a removable pointed pin called a scribe that can be used to mark measurements on the object being squared. Framing and speed squares typically come with instructions for various tasks. How to Maintain a Square Maintaining a square is relatively easy. Most important, do not store it where it can become damaged or bent, as accurate measurement is its primary task. Steel squares should be kept clean and dry so they don't rust. Most framing and speed squares now are made of aluminum and, with care, will be useful for decades. Hand Tools Image Gallery Tools Related to the Square Other handy measurement devices include the tape measure and level. Not what you're looking for? Try these: Home Repair Tools: Whether you prefer to use the Yellow Pages for anything that needs fixing around the house or consider yourself a regular do-it-yourselfer, there are a handful of tools that everyone should have in their tool box. Learn all about them in this article.Measuring and Marking Tools: Find out which tools come in handy when calculating sizes and marking off placement in certain home improvement jobs on this page.Tape Measure: Even people who don't consider themselves "handy" should have a tape measure in their home for measuring large spaces or household items. Find out about the many uses of the tape measure on this page. SlideShare uses cookies to improve functionality and performance, and to provide you with relevant advertising. If you continue browsing the site, you agree to the use of cookies on this website. See our User Agreement and Privacy Policy. SlideShare uses cookies to improve functionality and performance, and to provide you with relevant advertising. If you continue browsing the site, you agree to the use of cookies on this website. See our Privacy Policy and User Agreement for details. Experienced teacher, having taught everything from 6 year olds, through to 16 year olds, in class and one on one in private session. My shop includes old and new, what ever it takes, is my attitude. My pinterest site also has links to material that I have found interesting and useful.Last updated22 February 2018This file consists of four worksheets at four levels - bronze, silver, gold and challenge. The BRONZE level worksheets, consists of questions that only evaluates questions that involve difference of squares, there is no common factoring or simplifying like terms. The SILVER level worksheet consists of simple difference of squares factoring, simplifying equations with like terms before factoring difference of squares. There is also several questions requiring simple common factoring before factoring difference of squares. The GOLD level worksheets has more complex questions requiring both simplifying like terms and common factoring. The CHALLENGE level worksheet involves questions with more then one variable, and solving for the value of the variable. This kind of question are excellent for prepping the students for quadratic questions where they need to find the roots. There are complete solutions for the Silver to Challenge worksheets for the parts 2 on.Creative Commons "Sharealike"Select overall rating(no rating)Your rating is required to reflect your happiness.Write a reviewUpdate existing reviewIt's good to leave some feedback.Something went wrong, please try again later.Tiered perfectly. An excellent resource to use for a class full of students who are at different proficiency levels. Empty reply does not make any sense for the end userExactly what I needed for my strong S3 class - thank you!Thanks for the comment - It is always interesting to see if what I created is what other people need, so thank you for the feed back.
Empty reply does not make any sense for the end userEmpty reply does not make any sense for the end userEmpty reply does not make any sense for the end userEmpty reply does not make any sense for the end userReport this resourceto let us know if it violates our terms and conditions. Our customer service team will review your report and will be in touch. Direction: Factor out each binomial completely. Work it out on paper first then scroll down to compare your solution. Problem 1: {x^2} - 100 Problem 2: 25{x^2} - 1 Problem 3: 4{x^2} - 9{y^2} Problem 4: 16{x^4} - {y^4} Problem 5: {\left({2x - 1} \right)^2} - 49 Problem 6: 4{x^2}{y^4} - 36{x^4}{y^2} ANSWER KEY SOLUTION TO PROBLEM #1 SOLUTION TO PROBLEM #2 SOLUTION TO PROBLEM #3 SOLUTION TO PROBLEM #4 SOLUTION TO PROBLEM #5 SOLUTION TO PROBLEM #6 You might also be interested in: Factoring Difference of Two Squares Factoring Sum and Difference of Two Cubes Factoring Sum and Difference of Two Cubes Practice Problems You know what a square is: It's a shape with four equal sides. Seems hard to improve upon, right? What, then, is a perfect square? In order to explain that, we'll have to get a little math-y. "Square" is one of those words that can refer to a shape, but it can also mean multiplying a number by itself. It's a little bit like an actual square because if you drew a square on graph paper, each side would take up the same number of units: A square that takes up five horizontal units would also take up five vertical units. If you counted up all the units of graph paper taken up by that particular square, you would find there were 25. Because 5 x 5 = 25. A "perfect square" refers to a type of number. Much like a prime number is a number that can't be made by simply multiplying two other whole numbers together (a prime number is a positive number greater than 1 that can only be divided by 1 or by itself), a perfect square is a number you get by multiplying another number by itself. For instance, 16 is a perfect square because you get it by multiplying 4 by 4; 144 is a perfect square because it can be achieved by multiplying 12 by itself. So, how do you know if a number is a perfect square? You can do that by finding its square root, which is the opposite of squaring a number. If the square root is a whole number, then it's a perfect square.

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