

Intermediate Algebra**Skill Builder # PF - 5****Factoring Two-Variable Quadratic Trinomials with Leading Coefficient of 1**

A two-variable quadratic trinomial with leading coefficient of 1 looks like

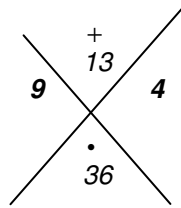
$$x^2 + bxy + cy^2.$$

To factor such a trinomial find two numbers that multiply to the constant term c and that add up to the middle coefficient b .

Examples

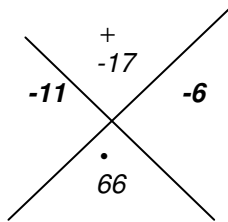
1. $x^2 + 13xy + 36y^2$

Solution:



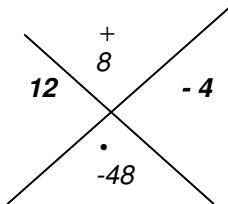
$\Rightarrow$ the factored form of $x^2 + 13xy + 36y^2$ is $(x + 9y)(x + 4y)$

2. $x^2 - 17xy + 66y^2$



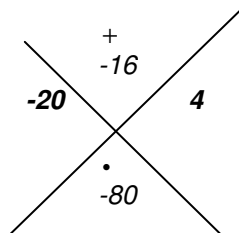
$\Rightarrow$ the factored form of $x^2 - 17xy + 66y^2$ is $(x - 11y)(x - 6y)$

3. $a^2 + 8ab - 48b^2$



$\Rightarrow$ the factored form of $a^2 + 8ab - 48b^2$ is $(a + 12b)(a - 4b)$

4. $m^2 - 16mn - 80n^2$



$\Rightarrow$ the factored form of $m^2 - 16mn - 80n^2$ is $(m - 20n)(m + 4n)$

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Factoring Two-Variable Quadratic Trinomials with Leading Coefficient of 1

Factor the given quadratic trinomial.

1. $x^2 + 12xy + 35y^2$

2. $x^2 - 15xy + 54y^2$

3. $a^2 + 11ab - 60b^2$

4. $a^2 - 13ab - 48b^2$

5. $n^2 - 12nm - 85m^2$

6. $m^2 + 8mn - 84n^2$

7. $s^2 + 18st + 81t^2$

8. $t^2 - 28ts + 160s^2$

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Factoring Two-Variable Quadratic Trinomials with Leading Coefficient of 1

Answers

1. $(x+7y)(x+5y)$

2. $(x-6y)(x-9y)$

3. $(a+15b)(a-4b)$

4. $(a-16b)(a+3b)$

5. $(n-17m)(n+5m)$

6. $(m+14n)(m-6n)$

7. $(s+9t)(s+9t)$ or $(s+9t)^2$

8. $(t-20s)(t-8s)$

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