

Factoring Difference of Squares - Basics

Objective 1: Factor the Difference of Squares when the Leading Coefficient = 1

Factoring the Difference of Squares: $a^2 - b^2 = (a + b)(a - b)$
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Prove why this factoring works (work backwards to multiply the two binomials using FOIL Method):

F O I L

$$(a + b)(a - b) =$$

Study Tip: Memorize the Squares for 1 through 12

$1^2 = 1$	$2^2 = 4$	$3^2 = 9$	$4^2 = 16$	$5^2 = 25$	$6^2 = 36$
$7^2 = 49$	$8^2 = 64$	$9^2 = 81$	$10^2 = 100$	$11^2 = 121$	$12^2 = 144$

Ex) Factor: $y^2 - 49$

Ex) Factor: $x^2 - 121$

Pause the video to try this one on your own, then restart the video when you are ready to check your answer.

Ex) Factor: $b^2 - 25$

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Exercises

Factor each expression.

1. $x^2 - 64$

2. $g^2 - 81$

Objective 2: Factor the Difference of Squares when the Constant Term is First

Ex) Factor: $100 - h^2$

Ex) Factor: $81 - p^2$

Pause the video to try this one on your own, then restart the video when you are ready to check your answer.

Ex) Factor: $36 - d^2$

Exercises

Factor each expression.

1. $49 - c^2$

2. $144 - k^2$

Objective 3: Factor the Difference of Squares when the Leading Coefficient $\neq 1$

Ex) Factor: $9x^2 - 16$

Ex) Factor: $25r^2 - 64$

Ex) Factor: $144 - 121g^2$

Pause the video to try this one on your own, then restart the video when you are ready to check your answer.

Ex) Factor: $49 - 4k^2$

Exercises

Factor each expression.

1. $16b^2 - 49$

2. $121 - 64w^2$

Objective 4: Factor the Difference of Squares when there are Two Variables

Ex) Factor: $25m^2 - 36n^2$

Ex) Factor: $121t^2 - 81v^2$

Ex) Factor: $49p^2 - 64q^2$

Pause the video to try this one on your own, then restart the video when you are ready to check your answer.

Ex) Factor: $100j^2 - 9k^2$

Exercises

Factor each expression.

1. $36p^2 - 25q^2$

2. $49h^2 - 81k^2$