

Factoring Difference of Squares – Intermediate

Objective 1: Factor the Difference of Squares with a Greatest Common Factor

Rule for Factoring the Difference of Squares: $a^2 - b^2 = (a + b)(a - b)$

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: $27y^3 - 48y$

Ex) Factor: $4a^3b^3 - 100a^5b$

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

Ex) Factor: $72m^3n - 98mn^3$

Objective 1 Extra Practice

Factor each expression.

1. $20x^4y^2 - 45x^2y^2$

2. $50a^2b^3 - 98b^3$

Objective 2: Factor the Difference of Squares with Fractional Coefficients

Ex) Factor: $v^2 - \frac{9}{25}$

Ex) Factor: $\frac{49}{16} - 4p^2$

Ex) Factor: $\frac{16}{9}x^2 - \frac{1}{4}y^2$

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

Ex) Factor: $\frac{25}{4}c^2 - 81d^2$

Objective 2 Extra Practice

Factor each expression.

1. $\frac{4}{9} - k^2$

2. $\frac{25}{16}h^2 - \frac{1}{81}j^2$

Objective 3: Factor the Difference of Squares with Grouping

Ex) Factor: $k^3 - 4k + 7k^2 - 28$

Ex) Factor: $p^3 - pq^2 - 5p^2 + 5q^2$

Ex) Factor: $49m - 98 - 36m^3 + 72m^2$

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

Ex) Factor: $4x^3 + 8x^2y - 25xy^2 - 50y^3$

Objective 3 Extra Practice

Factor each expression.

1. $9a^3 - 4ab^2 - 18a^2b + 8b^3$

2. $25x^4 + 25x^2y - 16x^2y^2 - 16y^3$

Objective 4: Factor the Difference of Squares with Higher Order Exponents

Ex) Factor: $j^{10} - 49$

Ex) Factor: $25t^4 - \frac{16}{9}$

Ex) Factor: $4r^6 - 121d^8$

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

Ex) Factor: $100k^2 - 49h^{12}$

Objective 4 Extra Practice

Factor each expression.

1. $4m^{10} - 49t^6$

2. $16g^8 - 121k^4$