

Practice Exercises on Factoring the Difference of Two Squares

A. Perfect Square or Not

Write PS if the algebraic expression is a perfect square or NPS if it is not a perfect square. One point each.

1. $25a^4b^2$
2. $81m^6$
3. $2x^2$
4. $196n^4$
5. $20c^3$

B. Yes or No

Write Yes if the algebraic expression is a difference of two squares or No if it is not a difference of two squares. One point each.

1. $9x^2 - 1$
2. $36k^4 - 4$
3. $4n^2 - 49$
4. $144a^3 - 25b^2$
5. $a^2 - 25b^4$

C. Multiple Choice

Factor the following binomials completely. Choose the correct answer from the given choices. One point each.

1. $36x^2 - 64$
 - a) $(6x + 8)(6x - 8)$
 - b) $(6x - 8)(6x - 8)$
 - c) $2(3x + 4)(3x - 4)$
 - d) $4(3x + 4)(3x - 4)$
2. $16x^4 - 49y^2z^2$
 - a) $(4x^2 + 7y^2z)(4x^2 - 7y^2z)$
 - b) $(4x^2 - 7y^2z)(4x^2 - 7y^2z)$
 - c) $(4x^2 + 7yz)(4x^2 - 7yz)$
 - d) $(4x^2 - 7yz)(4x^2 - 7yz)$
3. $4a^2 - b^6$
 - a) $(2a - b^3)(2a - b^3)$
 - b) $(2a + b^3)(2a - b^3)$
 - c) $(2a - b^4)(2a - b^4)$
 - d) $(2a + b^4)(2a - b^4)$
4. $81m^4n^2 - 9z^6$
 - a) $(9m^2n + 3z^3)(9m^2n - 3z^3)$
 - b) $(9m^2n - 3z^3)(9m^2n - 3z^3)$
 - c) $3(3m^2n + z^3)(3m^2n - z^3)$
 - d) $9(3m^2n + z^3)(3m^2n - z^3)$
5. $16m^8 - 81b^4$
 - a) $(4m^4 - 9b^2)(4m^4 - 9b^2)$
 - b) $(4m^4 + 9b^2)(4m^4 - 9b^2)$
 - c) $(4m^6 - 9b^2)(4m^6 - 9b^2)$
 - d) $(4m^6 + 9b^2)(4m^6 - 9b^2)$

D. Fill in the blanks

Type the correct answer in the blank. One point each.

1. $4a^2 - b^6 = (2a + \underline{\hspace{1cm}})(2a - b^3)$
2. $c^4 - 1 = (\underline{\hspace{1cm}} + 1)(c + 1)(c - 1)$
3. $144x^6 - 100y^4 = \underline{\hspace{1cm}}(6x^3 + 5y^2)(6x^3 - 5y^2)$
4. $180m^2 - 5 = \underline{\hspace{1cm}}(6m + 1)(6m - 1)$
5. $20a^2 - 45 = \underline{\hspace{1cm}}(2a + 3)(2a - 3)$
6. $36a^4 - 25b^4 = (6a^2 + 5b^2)(\underline{\hspace{1cm}} - 5b^2)$
7. $125m^4 - 20n^4 = 5(5m^2 + \underline{\hspace{1cm}})(5m^2 - 2n^2)$
8. $4x^4m - 36y^4m = \underline{\hspace{1cm}}(x^2 + 3y^2)(x^2 - 3y^2)$
9. $2x^4r - 72y^8r = 2r(x^2 + 6y^4)(x^2 - \underline{\hspace{1cm}})$
10. $64x^6 - y^4 = (\underline{\hspace{1cm}} + y^2)(8x^3 - y^2)$

