

NAME \_\_\_\_\_

**Module 12** Simplifying Algebraic Expressions by Factoring Polynomials  
**Lesson 3** Factoring The Difference of Two Squares



**additional  
practice**

Factor completely, if possible.

1.  $b^2 - 1$

$(b - 1)(b + 1)$

3.  $36 - z^2$

$(6 - z)(6 + z)$

5.  $x^2 - 8$

Cannot be factored

7.  $r^4 - 4$

$(r^2 - 2)(r^2 + 2)$

9.  $d^{12} - 81$

$(d^6 + 9)(d^3 + 3)(d^3 - 3)$

11.  $v^4 - 16$

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

13.  $m^2 - n^2$

$(m - n)(m + n)$

15.  $25a^4 - 81b^2$

$(5a^2 - 9b)(5a^2 + 9b)$

17.  $16m^5 - 25n^8$

Cannot be factored

19.  $k^8 - 121m^{10}$

$(k^4 - 11m^5)(k^4 + 11m^5)$

2.  $y^2 - 25$

$(y + 5)(y - 5)$

4.  $4 + k^2$

Cannot be factored

6.  $m^2 - 9$

$(m - 3)(m + 3)$

8.  $100 - p^6$

$(10 - p^3)(10 + p^3)$

10.  $w^{16} - 1$

$(w - 1)(w + 1)(w^2 + 1)(w^4 + 1)(w^8 + 1)$

12.  $625 - k^8$

$(5 - k^2)(5 + k^2)(25 + k^4)$

14.  $x^2 - 9y^2$

$(x - 3y)(x + 3y)$

16.  $36c^8 - 49d^4$

$(6c^4 - 7d^2)(6c^4 + 7d^2)$

18.  $49x^8 - 100y^{10}$

$(7x^4 - 10y^5)(7x^4 + 10y^5)$

20.  $196u^{12} - 81v^2$

$(14u^6 - 9v)(14u^6 + 9v)$

21.  $324a^6 - 9b^4$

$(18a^3 - 3b^2)(18a^3 + 3b^2)$

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23.  $256g^8 - 81h^{12}$

$(4g^2 - 3h^3)(4g^2 + 3h^3)(16g^4 + 9h^6)$

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25.  $c^8 - d^{16}$

$(c - d^2)(c + d^2)(c^2 + d^4)(c^4 + d^8)$

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27.  $a^{10}b^6 - 36$

$(a^5b^3 - 6)(a^5b^3 + 6)$

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22.  $225m^6 - 36n^4$

$(15m^3 - 6n^2)(15m^3 + 6n^2)$

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24.  $16y^4 - z^8$

$(2y - z^2)(2y + z^2)(4y^2 + z^4)$

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26.  $p^{24} - q^{12}$

$(p^6 - q^3)(p^6 + q^3)(p^{12} + q^6)$

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28.  $x^{16}y^8 - 64$

$(x^8y^4 - 8)(x^8y^4 + 8)$

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