

Practice

Factoring IS FUN

Student Edition
Pages 274-280

Factoring

Factor completely.

1. $15a^3b - 10ab^4$

$$5ab(3a-2b)$$

3. $16r^4 - 169$

$$(4r-13)(4r+13)$$

5. $2y^2 - 242$

$$2(y^2-121) = 2(y-11)(y+11)$$

7. $8m^3 - 1$

$$(2m-1)(4m^2+2m+1)$$

9. $x^2 - 3x - 10$

$$(x-5)(x+2)$$

11. $4a^2 + a - 3$

$$(a+1)(4a-3)$$

$$y^2 + 20y + 96$$

$$(y+12)(y+8)$$

15. $x^2 - 8x + 16$

$$(x-4)(x-4)$$

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

$$(x+2)(x-y)$$

19. $4x^4 - 4x^2$

$$4x^2(x^2-1) = 4x^2(x-1)(x+1)$$

21. $45x^3 - 80y^3$

$$5(9x^3-16y^3) = 5(3x-4y)(3x+4y)$$

23. $4a^3 + 12ab + 9b^3 - 25c^3$

$$5y^3 + 135y^4$$

$$5y^2(y^2+27) = 5y^2(y+3)(y^2-3y+9)$$

$$xy(2x^2-x^2y+y^2)$$

2. $2x^2y - x^2y + 5xy^2 + xy^2$

$$xy^2(2x-1) + xy^2(5y+1)$$

4. $c^2 - 49$

$$(c-7)(c+7)$$

6. $x^2 + 8$

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

8. $b^4 - 81$

$$(b^2-9)(b^2+9) = (b-3)(b+3)(b^2+9)$$

10. $r^2 + 3r^2 - 54r$

$$r(r^2+3r-54) = r(r+9)(r-6)$$

12. $2t^3 + 32t^2 + 128t$

$$2t(t^2+16t+64) = 2t(t+8)(t+8)$$

14. $6n^2 - 11n - 2$

$$(n-2)(6n+1)$$

16. $21 - 7t + 3r - rt$

$$7(3-t) + r(3-t) = (3-t)(7+r)$$

18. $x^2 + 2xy + 2x + y^2 + 2y - 8$

$$x(x+2y+2) + (y+4)(y-2)$$

20. $k^3 - 2k^2r - 3kr^2$

$$k(k^2-2kr-3r^2) = k(k-3r)(k+r)$$

22. $36a^3b^3 + 66a^2b^4 - 210ab^5$

$$6ab^2(6a^2+11ab-35b^2)$$

24. $81r^4 - 16$

$$(9x^2-4)(9x^2+4) = (3x-2)(3x+2)(9x^2+4)$$

26. $18p^3 - 51p^2 - 135p$

$$3p(6p^2-17p-45) = 3p(3p+5)(2p-9)$$

ALGEBRA 2
Factoring Review

NAME _____
Date _____ Period _____

Factor completely.

1. $3x^2 - 6x$

$3x(x - 2)$

2. $x^2 - 25$

$(x - 5)(x + 5)$

3. $y^2 + 10y + 25$

$(y + 5)^2$

4. $x^2 + 9x + 14$

$(x + 7)(x + 2)$

5. $8a^3 - 27$

$(2a - 3)(4a^2 + 6a + 9)$

6. $5m^2 - 20$

$5(m^2 - 4)$

$5(m - 2)(m + 2)$

7. $3a^3b^2c + 6a^2b^3c^2$

$3a^2b^2c(1 + 2a^3bc)$

8. $3y^2 + 6y + 3$

$3(y^2 + 2y + 1)$

$3(y + 1)^2$

9. $64y^3 + 1$

~~$(4y + 1)(16y^2 - 4y + 1)$~~
 $(4y + 1)(16y^2 - 4y + 1)$

10. $a^2 + 2a - 24$

$(a + 6)(a - 4)$

11. $2x^2 - 3x - 2$

$(2x + 1)(x - 2)$

12. $6x^3 + 9x^2 + 3x$

$3(2x^2 + 3x + 1)$

$3x(2x + 1)(x + 1)$

13. $3x^4 - 48$

$$3(x^4 - 16)$$

$$3(x^2 - 4)(x^2 + 4)$$

$$3(x-2)(x+2)(x^2+4)$$

15. $10x^2 + 28x - 48$

$$2(5x^2 + 14x - 24)$$

$$2(5x - 6)(x + 4)$$

17. $2x^3 - 54$

$$2(x^3 - 27)$$

$$2(x-3)(x^2+3x+9)$$

19. $3x^2 + 48$

$$3(x^2 + 16)$$

21. $6x^3 + 40x^2 + 24x$

$$2x(3x^2 + 20x + 12)$$

$$2x(3x^2 + 2k + 18x) + 12$$

$$2x(3x + 2)(x + 6)$$

23. $x^2 - 2x + 3$

14. $x^3 + 2x^2 - 3x$

$$x(x^2 + 2x - 3)$$

$$x(x+3)(x-1)$$

16. $x^3 - 2x^2 + 3x - 6$

$$x^2(x-2) + 3(x-2)$$

$$(x-2)(x^2+3)$$

18. $y^3 + 27y^2$

$$y^2(y^2 + 27)$$

$$y^2(y+3)(y^2-3y+9)$$

20. $3x^2 - 16x + 5$

$$(3x-1)(x-5)$$

22. $8m^3 - 20m^2 - 6m + 15$

$$4m^2(2m-5) - 3(2m-5)$$

$$(2m-5)(4m^2-3)$$

24. $xy^4 - xy$