

Factoring Quadratics Review

Date _____ Hour _____

Factor each completely.

1) $6n^3 + 15n^2 + 10n + 25$

$3n^2(n+5) 5(2n+5)$

$(3n^2+5)(2n+5)$

3) $n^2 - 9$

$(n+3)(n-3)$

⁻⁸⁴_{21 4} 5) $3m^2 + 17m - 28$

$3m^2 + 21m - 4m - 28$

$3m(m+7) - 4(m+7)$

$(3m-4)(m+7)$

7) $8a^3 + 1$

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

9) $21m^3 - 14m^2 + 24m - 16$

$7m^2(3m-2) 8(3m-2)$

$(7m^2+8)(3m-2)$

11) $2x^2 - 14x - 60$

$2(x^2-7x-30)$

$2(x-10)(x+3)$

⁹⁶ 13) $3m^2 + 28m + 32$

$3m^2 + 24m + 4m + 32$

$3m(m+8) 4(m+8)$

$(3m+4)(m+8)$

15) $x^3 - 8$

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

2) $4n^3 - 8n^2 + 5n - 10$

$4n^2(n-2) 5(n-2)$

$(4n^2+5)(n-2)$

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

$2x^2(x+2)$

⁷² 6) $9b^2 - 38b + 8$

$9b^2 - 36b - 2b + 8$

$9b(b-4) - 2(b-4)$

$(9b-2)(b-4)$

8) $m^3 - 27$

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

10) $2x^2 - 8x$

$2x(x-4)$

12) $16v^2 - 9$

$(4v+3)(4v-3)$

⁻⁶⁰ 14) $5v^2 - 28v - 12$

$5v^2 - 30v + 2v - 12$

$5v(v-6) 2(v-6)$

$(5v+2)(v-6)$

16) $48n^3 + 6n^2 + 40n + 5$

$6n^2(8n+1) 5(8n+1)$

$(6n^2+5)(8n+1)$

108

$$17) 2x^3 + 21x^2 + 54x$$

$$x(2x^2 + 21x + 54)$$

$$2x^2 + 12x + 9x + 54$$

$$2x(x+6) \quad 9(x+6)$$

$$\boxed{x(x+6)(2x+9)}$$

-72

$$19) 9x^2 - 34x - 8$$

$$9x^2 - 36x + 2x - 8$$

$$9x(x-4) \quad 2(x-4)$$

$$\boxed{(9x+2)(x-4)}$$

$$21) 56m^3 + 16m^2 + 35m + 10$$

$$8m^2(7m+2) \quad 5(7m+2)$$

$$\boxed{(8m^2+5)(7m+2)}$$

$$23) 4v^2 - 9$$

$$\boxed{(2v+3)(2v-3)}$$

$$25) 45a^2 - 20$$

$$5(9a^2 - 4)$$

$$\boxed{5(3a+2)(3a-2)}$$

$$27) p^2 - 11p + 28$$

$$\boxed{(p-7)(p-4)}$$

$$29) 3x^2 - 3$$

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

$$\boxed{3(x+1)(x-1)}$$

$$31) 16m^2 - 1$$

$$\boxed{(4m+1)(4m-1)}$$

$$18) 125u^3 + 64$$

$$\boxed{(5u+4)(25u^2 - 20u + 16)}$$

$$20) 4x^3 - 108$$

$$4(x^3 - 27)$$

$$\boxed{4(x-3)(x^2 + 3x + 9)}$$

-216

$$22) 8p^2 - 30p - 27$$

$$8p^2 - 36p + 6p - 27$$

$$4p(2p-9) \quad 3(2p-9)$$

$$\boxed{(4p+3)(2p-9)}$$

-100

$$24) 2p^2 - 15p - 50$$

$$2p^2 - 20p + 5p - 50$$

$$2p(p-10) \quad 5(p-10)$$

$$\boxed{(2p+5)(p-10)}$$

-288

$$26) 45v^2 - 60v - 160$$

$$5(9v^2 - 12v - 32)$$

$$9v^2 - 24v + 12v - 32$$

$$3v(3v-8) \quad 4(3v-8)$$

$$\boxed{5(3v-8)(3v+4)}$$

$$28) 10m^3 - 12m^2 + 5m - 6$$

$$2m^2(5m-6) \quad 1(5m-6)$$

$$\boxed{(2m^2+1)(5m-6)}$$

-405

$$30) 18n^3 + 152n^2 - 90n$$

$$2n(9n^2 + 76n - 45)$$

$$9n^2 + 81n - 5n - 45$$

$$9n(n+9) - 5(n+9)$$

$$\boxed{2n(9n-5)(n+9)}$$

$$32) 27x^3 + 64$$

$$\boxed{(3x+4)(9x^2 - 12x + 16)}$$