

Algebra 2

Name Key

Date _____ Hour _____

Special Cases #2

Factor each completely.

1) $27a^3 + 8$

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

2) $1 + 216x^3$

$(6x+1)(36x^2-6x+1)$

3) $64m^3 + 27$

$(4m+3)(16m^2-12m+9)$

4) $x^3 + 64$

$(x+4)(x^2-4x+16)$

5) $125a^3 - 8$

$(5a-2)(25a^2+10a+4)$

6) $64x^3 + 125$

$(4x+5)(16x^2-20x+25)$

7) $125x^3 + 27$

$(5x+3)(25x^2-15x+9)$

8) $27a^3 - 8$

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

9) $125x^3 - 216$

$(5x-6)(25x^2+30x+36)$

10) $x^3 + 8$

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

11) $27x^3 - 64$

$(3x-4)(9x^2+12x+16)$

12) $x^3 + 27$

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

13) $128m^3 + 250$

$2(64m^3+125)$

$2(4m+5)(16m^2-20m+25)$

14) $108u^3 - 4$

$4(27u^3-1)$

$4(3u-1)(9u^2+3u+1)$

15) $8a^3 - 40a^2 - 5a + 25$

$8a^2(a-5) - 5(a-5)$

$(8a^2-5)(a-5)$

16) $35n^3 + 21n^2 - 40n - 24$

$7n^2(5n+3) - 8(5n+3)$

$(7n^2-8)(5n+3)$

Factoring Maze

Instructions:

Start out the maze by factoring every polynomial. Write the binomial factors under the polynomial for easy reference. After you've finished factoring, find the path from the start to the end by moving one space up, down, left, or right when the adjacent square shares a factor with the current square. Ex: You may move from $(x+2)(x-6)$ to $(x+2)(3x+4)$ because they share a factor, but you would not move from $(x-5)(2x-3)$ to $(x-4)(x+5)$. You finish the maze when you reach the exit.

START →

$x^2 + 6x - 16$ $(x+8)(x-2)$	$5x^2 + 21x + 4$	$x^2 + 10x + 16$	$4x^2 - 4x - 3$	$x^2 - x - 20$
$2x^2 - 11x + 12$	$4x^2 - 8x + 3$ $(2x-3)(2x+1)$	$x^2 + 2x - 63$	$6x^2 - 19x + 10$	$9x^2 + 14x - 8$
$x^2 + 4x + 3$	$x^2 - 4x - 60$ $(x-10)(x+6)$	$6x^2 + 5x + 1$ $(2x+1)(3x+1)$	$x^2 + 2x - 3$ $(x+3)(x-1)$	$6x^2 + 13x + 6$
$5x^2 + 3x - 8$ $(x+1)(5x+8)$	$16x^2 - 26x + 3$ $(2x-3)(8x+1)$	$x^2 - 5x + 6$ $(x-2)(x-3)$	$3x^2 - 13x + 12$ $(x-3)(3x-4)$	$9x^2 - 9x - 4$ $(3x-4)(3x+1)$
$x^2 - 1$ $(x+1)(x-1)$	$x^2 - x - 12$ $(x-4)(x+3)$	$4x^2 - 11x - 3$ $(x-3)(4x+1)$	$x^2 - 2x - 15$ $(x-5)(x+3)$	$6x^2 + x - 12$ $(2x+3)(3x-4)$
$x^2 - 5x - 6$ $(x-6)(x+1)$	$2x^2 + 9x + 4$ $(x+4)(2x+1)$	$8x^2 + 6x + 1$ $(2x+1)(4x+1)$	$2x^2 + x - 6$	$2x^2 - 11x - 21$ $(x-7)(2x+3)$

END