Honors Algebra 1 Name KEY

Chapter 9 Factoring PRACTICE Test (circle final answer) Date

ALL PROBLEMS ARE 6 POINTS

Factor each completely.

1) $-5n^4 + 70n^3 - 200n^2$

$-5N^2(N^2 - 14N + 40)$

$-5N^2(N-10)(N-4)$

2) $-3x^2 + 3x + 126$

$-3(x^2 - x - 42)$

$-3(x-7)(x+6)$

3) $-7n^2 + 2n + 9$

$-1(7N^2 - 2N - 9)$

$-1(7N-9)(N+1)$

4) $8a^2 - 52a + 60$

$4(2A^2 - 13A + 15)$

$4(2A-3)(A-5)$

5) $-10x^3 - 25x^2 + 40x + 100$

$-5(2x^3 + 5x^2 - 8x - 20)$

$(-5)[x^2(2x+5)] - 4(2x+5)$

$-5(2x+5)(x^2-4) =$

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

6) $30x^7 - 6x^6 - 120x^5 + 24x^4$

$6x^4(5x^3 - x^2 - 20x + 4)$

$6x^4[x^2(5x-1) - 4(5x-1)]$

$6x^4(5x-1)(x^2-4)$

$6x^4(5x-1)(x-2)(x+2)$

7) $14b^5 + 12b^4 - 14b^3 - 12b^2$

$2B^2(7B^3 + 6B^2 - 7B - 6)$

$(2B^2)[B^2(7B+6) - 1(7B+6)]$

$2B^2(7B+6)(B^2-1)$

$2B^2(7B+6)(B+1)(B-1)$

8) $18n^6 - 48n^5 + 18n^4 - 48n^3$

$6N^3(3N^3 - 8N^2 + 3N - 8)$

$6N^3[N^2(3N-8) + 1(3N-8)]$

$6N^3(3N-8)(N^2+1)$

Solve each equation by factoring. Remeber to use your calculator to check in the original equation!

9) $12x^2 + 48x + 90 = 6x^2$

$6x^2 + 48x + 90 = 0$

$6(x^2 + 8x + 15) = 0$

$6(x+3)(x+5) = 0$

$x = -3$ $x = -5$

10) $9n^2 + 64n + 256 = 5n^2$

$4N^2 + 64N + 256 = 0$

$4(N^2 + 16N + 64) = 0$

$4(N+8)(N+8) = 0$

$N = -8$

(page 2) Solve each equation by factoring. Remeber to use your calculator to check in the original equation!

11) $8x^3 - 192x = 16x^2$

$8x^3 - 16x^2 - 192x = 0$

$8x(x^2 - 2x - 24) = 0$

$8x(x-6)(x+4) = 0$

$x = 0$ $\quad x = 6$ $\quad x = -4$

12) $7x^2 = 28x$

$7x^2 - 28x = 0$

$7x(x-4) = 0$

$x = 0$ $\quad x = 4$

13) $32n^3 + 4n^2 - 16 = 128n$

$32N^3 + 4N^2 - 128N - 16 = 0$

$4(8N^3 + N^2 - 32N - 4) = 0$

$4[N^2(8N+1) - 4(8N+1)] = 0$

$4(8N+1)(N^2 - 4) = 0$

$4(8N+1)(N-2)(N+2) = 0$

$8N+1 = 0$ $\quad N = 2$ $\quad N = -2$

$N = -1/8$

14) $14x^3 - 14x + 8 = 8x^2$

$14x^3 - 8x^2 - 14x + 8 = 0$

$2(7x^3 - 4x^2 - 7x + 4) = 0$

$2[x^2(7x-4) - 1(7x-4)] = 0$

$2(7x-4)(x^2 - 1) = 0$

$2(7x-4)(x+1)(x-1) = 0$

$7x - 4 = 0$ $\quad x = -1$ $\quad x = 1$

$x = 4/7$

(page 3) Solve each equation by factoring. Remeber to use your calculator to check in the original equation!

15) $125n^3 - 100n^2 = -20n$

$125N^3 - 100N^2 + 20N = 0$

$5N(25N^2 - 20N + 4) = 0$

$5N(5N-2)(5N-2) = 0$

$N = 0$

$5N - 2 = 0$

$N = \frac{2}{5}$

16) $18x^3 = 50x$

$18x^3 - 50x = 0$

$2x(9x^2 - 25) = 0$

$2x(3x-5)(3x+5) = 0$

$N = 0$

$3x - 5 = 0$

$x = \frac{5}{3}$

$3x + 5$

$x = \frac{-5}{3}$

BONUS (4pts) Solve equation by factoring. Leave solution(s) as fractions. Don't forget to check.

17) $16n^2 + 27n + 13 = 4n^2 - 2$

$12N^2 + 27N + 15 = 0$

$3(4N^2 + 9N + 5) = 0$

$3(4N+5)(N+1) = 0$

$N = \frac{-5}{4}$

$N = -1$

18) $16x^2 - 42x + 19 = -5 + x^2$

$15x^2 - 42x + 24 = 0$

$3(5x^2 - 14x + 8) = 0$

$3(5x-4)(x-2) = 0$

$x = \frac{4}{5}$

$x = 2$