Algebra II - Chapter 4 Factoring Day 4 Name: Key

Factor completely

1. $x^2 + 0x - 49$ $(x-7)(x+7)$

2. $x^2 + 0x - 1$ $(x-1)(x+1)$

3. $12w^2 - 22w + 10$ $2(6w^2-11w+5)$ $2(6w+5)(w+1)$

4. $8q^3 + 4q^2 - 4q - 2$ $2(4q^3+2q^2-2q-1)$ $2(2q^2(2q+1)-1(2q+1))$ $2(2q+1)(2q^2-1)$

Factor using the Difference of Two Squares

5. $n^2 - 25$ $(n+5)(n-5)$

6. $m^2 - 225$ $(m+15)(m-15)$

7. $9x^2 - 1$ $(3x+1)(3x-1)$

8. $4y^2 - 25$ $(2y-5)(2y+5)$

9. $49x^2 - 4$ $(7x-2)(7x+2)$

10. $16y^2 - 625$ $(4y-25)(4y+25)$

11. $81v^2 - 64$ $(9v-8)(9v+8)$

12. $196c^2 - 16$ $4(49c^2-4)$ $4(7c-4)(7c+4)$

13. $8n^2 - 32$ $8(n^2-4)$ $8(n-2)(n+2)$

Factor using the Perfect Square Trinomials

14. $4x^2 - 4x + 1$ $(2x-1)^2$

15. $x^2 + 8x + 16$ $(x+4)^2$

16. $r^2 - 18r + 81$ $(r-9)^2$

17. $4x^2 + 20x + 25$ $(2x+5)^2$

18. $16n^2 + 72n + 81$ $(4n+9)^2$

19. $9x^2 - 12x + 4$ $(3x-2)^2$

Name: _____

Solve by Factoring.

20. $64x^2 - 49 = 0$

$(8x-7)(8x+7)=0$

$x=\frac{7}{8}$ $x=\frac{-7}{8}$

21. $x^2 + 10x + 25 = 0$

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

$x=-5$

22. $x^2 + 6x = 40$

$x^2+6x-40=0$

$(x+10)(x-4)=0$

$x=-10$ $x=4$

23. $3x^2 = 9x$

$3x^2-9x=0$

$3x(x-3)=0$

$3x=0$ $x-3=0$

$x=0$ $x=3$

24. $2x^2 + 10x + 318 = 4x$

$2x^2+6x+318=0$

$2(x^2+3x+159)=0$

$2(\quad)(\quad)=0$

Not factorable

25. $121n^2 = 1$

$121n^2-1=0$

$(11n+1)(11n-1)=0$

$n=\frac{-1}{11}$ $n=\frac{1}{11}$

26. $n^2 = 3n + 40$

$n^2-3n-40=0$

$(n-8)(n+5)=0$

$n=8$ $n=-5$

27. $n^2 - 20n + 100 = 0$

$(n-10)^2=0$

$n=10$

28. $6r^3 + 19r^2 = 7r$

$6r^3+19r^2-7r=0$

$r(6r^2+19r-7)=0$

$r(3r-1)(2r+7)=0$

$r=0$ $r=\frac{1}{3}$ $r=\frac{-7}{2}$

29. $3n^4 - 147n^2 = 0$

$3n^2(n^2-49)=0$

$3n^2(n-7)(n+7)=0$

$n=0$ $n=7$ $n=-7$

30. $16n^2 = -9 - 24n$

$16n^2+24n+9=0$

$(4n+3)^2=0$

$n=\frac{-3}{4}$

31. $9x^2 - 168 = 1$

$9x^2-169$

$(3x-13)(3x+13)=0$

$x=\frac{13}{3}$ $x=\frac{-13}{3}$

32. $r^2 + 17r + 60 = 0$

$(r+5)(r+12)=0$

$r=-5, -12$

33. $27x^2 - 48 = 0$

$3(9x^2-16)=0$

$3(3x-4)(3x+4)=0$

$x=\frac{4}{3}, \frac{-4}{3}$

34. $36n^2 = 4$

$4(9n^2-1)=0$

$4(3n-1)(3n+1)=0$

$n=\frac{1}{3}, \frac{1}{3}$