Pre.4 Factoring Worksheet NAME Key

FACTOR COMPLETELY: *(Hint: Look for GCF 1st)*

1. $3t^2 - 48$ $3(t^2-16) = \boxed{3(t-4)(t+4)}$

2. $2y^2 + 6y + 4$ $2(y^2+3y+2) = \boxed{2(y+1)(y+2)}$

3. $-3a^3 + 3ab^2$ $-3a(a^2-b^2) = \boxed{-3a(a-b)(a+b)}$

4. $2x^2 + 3x - 20$ $\boxed{(2x-5)(x+4)}$

5. $4x^2 + 25x - 21$ $\boxed{(4x-3)(x+7)}$

6. $20x^2 - 29x - 36$ $\boxed{(4x-9)(5x+4)}$

7. $ar^2 - 3ar - 4a$ $\boxed{a(r-4)(r+1)}$

8. $7k^2 - 21k - 28$ $(7k+7)(k-4) = \boxed{7(k+1)(k-4)}$

9. $4a^2p^3 + 20a^2p^2 + 16a^2p$ $\boxed{4a^2p(p+4)(p+1)}$

10. $12c^2 - 24c - 15$ $\boxed{3(2c+1)(2c-5)}$

11. $288y^2 - 98x^4$ $\boxed{2(12y-7x^2)(12y+7x^2)}$

12. $-5 - 28k + 12k^2$ $\boxed{(-5+2k)(1+6k)}$

13. $6y^2 - 28y$ $\boxed{2y(3y-14)}$

14. $6a^3b - 26a^2b^2 - 20ab^3$ $\boxed{2ab(3a+2b)(a-5b)}$

15. $75a^3b + 90a^2b + 27ab$ $\boxed{3ab(5a+3)^2}$

16. $m^4 - n^4 = (m^2-n^2)(m^2+n^2) = \boxed{(m-n)(m+n)(m^2+n^2)}$

17. $64 - 27x^3$ $\boxed{(4 - 3x)(16 + 12x + 9x^2)}$

18. $216 + 125y^6$ $\boxed{(5x^2 + 6)(25x^4 - 30x^2 + 36)}$

19. $8a^6 - 343$ $\boxed{(2a^2 - 7)(4a^4 + 14a^2 + 49)}$

20. $15x^2 + 20x - 6x - 8 = \boxed{(3x + 4)(5x - 2)}$
$15x^2 + 14x - 8$

21. $b(2ab + 5b) - (6a - 15)$
$b(2a + 5) - 3(2a + 5) = \boxed{(2a + 5)(b - 3)}$

22. $t^2 - 63 + 2t = \boxed{(t + 9)(t - 7)}$
$t^2 + 2t - 63$

23. $6a^2 - 10 - 11a = \boxed{(2x - 5)(3x + 2)}$
$6a^2 - 11a - 10$

24. $20x^2 + 11xy - 3y^2 = \boxed{(4x + 3y)(5x - y)}$

25. $40a^3b - 30a^2b^2 - 25ab^3 = 5ab(8a^2 - 6ab - 5b^2) = \boxed{5ab(2a + b)(4a}$

26. $5x^2 - 320 = 5(x^2 - 64) = \boxed{5(x - 8)(x + 8)}$

27. $4x^4 - 81x^2 = \boxed{x^2(2x^2 - 9)(2x + 9)}$
$x^2(4x^2 - 81)$

28. $12x^4 + 60x^3 + 75x^2 = 3x^2(4x^2 + 20x + 25) = \boxed{3x^2(2x + 5)^2}$

29. $-10a^3b^2 - 15a^2b^4 = \boxed{-5a^2b^2(2a + 3b^2)}$
$-5a^2b^2$

30. $(7x - 3)^2 - 9y^2 = \boxed{[(7x - 3) - 3y][(7x - 3) + 3y)]}$

31. $(3x^3 + 6x^2) - 27x - 54$
$3x^2(x + 2) - 27(x + 2) = (x + 2)(3x^2 - 27) = \boxed{3(x + 2)(x - 3)(x + 3)}$

32. $81 - x^4 = (9 - x^2)(9 + x^2) = \boxed{(3 - x)(3 + x)(9 + x^2)}$