



Name: _____

Period: _____

3.1 GCF and Grouping HW 2018-19

Simplify. (Distribute)

1. $4(5x+8)$

2. $3x(x+4z)$

3. $2x^2y^3(4x^3-7xy^5+5)$

Factor out the greatest common factor. If the leading coefficient is negative, factor out a negative.

4. m^2+5m

5. $7x^2-14x$

6. $9k^3-3k$

7. $2x^3+12x^2-8x$

8. $28n^9+20n^3$

9. $-18u^4+12$

10. $-4t^3v-10t^2v^5$

11. $8r^3-36r^2+4r$

12. $-24q^2-12q+42$

13. $2y^3z-8y^2z+5yz^2+10yz^3$

14. $-15x^3y^2+12xy-18xy^3$

Factor each polynomial by grouping. Don't forget to factor out the GCF first, if necessary.

15. $2h^3 - 5h^2 + 8h - 20$

16. $g^3 - 3g^2 - 5g + 15$

17. $3x^2 + 3x - 5xy - 5y$

18. $5a^3 + 2a^2 + 15a + 6$

19. $8x^4 + 20x^3 - 16x^2 - 40x$

20. $75x^4 + 25x^3 + 45x^2 + 15x$

21. $6xy - 36x - 5y + 30$

22. $42xy - 36x^2 + 21y - 18x$

23. $7x^2 + 8x + 49x + 56$

24. $21ab + 126a^2 + 3b + 18a$

25. $15xy + 24x - 105y^3 - 168y^2$

26. $112uv - 64u + 280v - 160$

Simplify

27. $5\sqrt{72}$

28. $5\sqrt{12} + 4\sqrt{27} + \sqrt{3}$

29. $(3\sqrt{7} - \sqrt{6})(4 + 2\sqrt{3})$

30. $5 \pm \sqrt{72}$

31. $3 \pm \sqrt{25}$

32. $1 \pm \sqrt{37}$

33. $7p^{-3}q^{-4}r^{-1} \cdot 2p^3q^{-4}r^{-2}$

34. $(2m^2)^3 \cdot 7nm^4$

35. $\frac{2t}{tuv^{-3}}$

Write an equivalent expression using radical notation.

36. $y^{1/2}$

37. $(ab^2)^{1/5}$

38. $4x^{1/4}$

Multiply

39. $(x-3)(x+5)$

40. $(2x-3)(x-7)$

41. $(x+5)^2$