Name _____ Date _____ Period _____

Factoring using GCF and Grouping

Simplify. (Distribute)

1. $4(5x+8)$

2. $3k(3k-1)$

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. $20x+32$

5. $9k^2-3k$

6. $-18u^4+12$

7. $8r^3-36r^2+4r$

8. $-4t^3v-10t^2v^5$

9. $2y^3z-8y^2z+5yz^2+10yz^3$

10. Look at questions 1 and 4, then look at questions 2 and 5. Write in complete sentences what the relationship is between the questions and answers.

Simplify. (Distribute)

11. $(h^2+4)(2h-5)$

12. $(x-6)(x+3)$

13. $(2x-5)^2$

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

14. $2h^3 - 5h^2 + 8h - 20$

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

16. $3x^2 + 3x - 5xy - 5y$

17. $5a^3 + 2a^2 + 15a + 6$

18. $6xy - 36x - 5y + 30$

19. $42xy - 36x^2 + 21y - 18x$

20. Compare question 11 and 14, Write in complete sentences what the relationship is between the question and answer.

Factor.

21. $x^2 + 2x + 3x + 6$

22. $4ax + 3ay + 4bx + 3by$

23. $28x^2y - 7xy$

24. $18mn + 27m^2n^3 + 36mn^2$

25. $5y^2 - 15y + 4y - 12$

26. $6x^2 - 15x - 8x + 20$

27. $7y^2 - 14y - y + 2$

28. $-18pt + 17mn$

29. $4y^2 + 16xy - 6xy - 24x^2$