SM2H

Name:_____ Period:_____

SM2H 3.3 Factoring Polynomials with a Leading Coefficient 2018-19

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

1. $49n^2 + 14n$
2. $-2x^2 + 4x - 6$

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

3. $4x^3 + 14x^2 - 6x - 21$

Factor completely.

4. $n^2 + 8n - 80$
5. $2x^2 + 14x + 24$
6. $n^2 + 4n - 9$

Factor each trinomial completely by grouping. Don't forget to check for a common factor first. If the polynomial is prime, say so.

7. $5n^2 + 22n + 8$
8. $2x^2 - 17x + 21$
9. $3h^2 - h - 14$

10. $12n^2 + 14n - 6$
11. $5x^2 + 16x - 6$
12. $4x^2 + 16xy + 7y^2$

Factor each trinomial completely by grouping. Don't forget to check for a common factor first. If the polynomial is prime, say so.

13. $3z^2 - 12z - 8$

14. $9k^3 + 15k^2 - 36k$

15. $6t^2 - 5t + 20$

16. $9x^2 + 40xy + 16y^2$

17. $-18p^2 + 33p - 9$

18. $2v^2 - 9v + 10$

Factor each trinomial completely. Don't forget to check for a common factor first. If the polynomial is prime, say so.

19. $4g^2 + 4g - 15$

20. $18x^2 - 32$

21. $-12u^2 + 22u + 4$

22. $8p^3 - 76p^2 + 36p$

23. $3d^2 + 12d - 36$

24. $12n^2 + 48n - 27$

25. In your own words, explain how to factor a trinomial of the form $ax^2 + bx + c$ using trial and error.

26. In your own words, explain how to factor a trinomial of the form $ax^2 + bx + c$ by grouping.

Review – Solve each equation.

27. $4(x-5) = -30$

28. $3x - 2 = -5x + 9$

29. $-(x-12) + 3x = 2x + 7$