

8-8**Practice**

Form K

Factoring by Grouping

Find the GCF of the first two terms and the GCF of the last two terms for each polynomial.

1. $6n^3 + 3n^2 + 10n + 5$

2. $12z^3 + 36z^2 + 4z + 12$

3. $9k^3 + 45k^2 + 2k + 10$

4. $11a^3 + 33a^2 + 8a + 24$

5. $2f^3 + 5f^2 - 4f - 10$

6. $16d^3 - 24d^2 - 6d + 9$

Factor each expression.

7. $6x^3 - 4x^2 + 15x - 10$

8. $5q^3 - 40q^2 - 4q + 32$

9. $28m^3 + 7m^2 - 8m - 2$

10. $3p^3 + 5p^2 + 9p + 15$

11. $18y^3 - 6y^2 - 63y + 21$

12. $3t^3 - 18t^2 + 5t - 30$

13. $250c^3 - 250c^2 + 100c - 100$

14. $18g^3 - 33g^2 + 30g - 55$

15. $88n^3 + 77n^2 - 72n - 63$

16. $50h^3 - 40h^2 + 60h - 48$

17. $24b^3 - 96b^2 - 14b + 56$

18. $54r^3 + 9r^2 - 6r - 1$

8-8**Practice** (continued)

Form K

Factoring by Grouping

Factor completely.

19. $49s^3 + 14s^2 + 14s + 4$

20. $32h^4 + 72h^3 + 36h^2 + 81h$

21. $42z^4 - 48z^3 - 7z^2 + 8z$

22. $60p^3 + 48p^2 + 25p + 20$

23. $26n^4 - 14n^3 + 91n^2 - 49n$

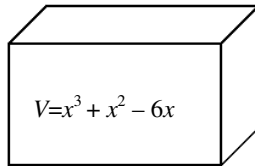
24. $40t^3 + 28t^2 - 30t - 21$

25. $45k^4 - 9k^3 + 10k^2 - 2k$

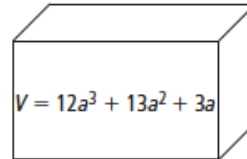
26. $18b^5 - 3b^4 + 30b^3 - 5b^2$

Find linear expressions for the possible dimensions of each rectangular prism.

27.



28.



29. A storage bin in the shape of a rectangular prism has a volume of $10x^3 + 9x^2 + 2x$. What linear expressions can represent possible dimensions of the bin?

30. **Writing** Describe the first step to look for in factoring a cubic expression containing four terms.

31. **Open-Ended** Write a 4-term expression that you can factor by grouping. Factor your polynomial.