8-1 Skills Practice

Monomials and Factoring

Factor each monomial completely.

1. $10a^4$
2. $-27x^3y^2$
3. $28pr^2$
4. $44m^2np^3$
5. $9x^3y^2$
6. $-17ab^2f$
7. $42g^2$
8. $36tu^2$
9. $-4a$
10. $-10x^4yz^2$

Find the GCF of each set of monomials.

11. $16f$, $21ab^2$
12. $18t$, $48t^4$
13. $32xyz$, $48xy^4$
14. $12m^3p^2$, $44mp^3$
15. $4q^2r^2t^2$, $9q^3r^3t^3$
16. $14ab^5$, $7a^2b^3c$

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8-2 Skills Practice

Using the Distributive Property

Factor each polynomial.

1. $7x + 49$
2. $8m - 6$
3. $5a^2 - 15$
4. $10q - 25q^2$
5. $8ax - 56a$
6. $81r + 48rt$
7. $t^2h + 3t$
8. $a^2b^2 + a$
9. $x + x^2y + x^3y^2$
10. $3p^2r^2 + 6pr + p$
11. $4a^2b^2 + 16ab + 12a$
12. $10h^3n^3 - 2hn^2 + 14hn$
13. $x^2 + 3x + x + 3$
14. $b^2 - 2b + 3b - 6$
15. $2j^2 + 2j + 3j + 3$
16. $2a^2 - 4a + a - 2$
17. $6t^2 - 4t - 3t + 2$
18. $9x^2 - 3xy + 6x - 2y$

Solve each equation. Check your solutions.

19. $x(x - 8) = 0$
20. $b(b + 12) = 0$
21. $(m - 3)(m + 5) = 0$
22. $(a - 9)(2a + 1) = 0$
23. $x^2 - 5x = 0$
24. $y^2 + 3y = 0$
25. $3a^2 = 6a$
26. $2x^2 = 3x$

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8-3 Skills Practice

Quadratic Equations: $x^2 + bx + c = 0$

Factor each polynomial.

1. $t^2 + 8t + 12$

2. $n^2 + 7n + 12$

3. $p^2 + 9p + 20$

4. $h^2 + 9h + 18$

5. $n^2 + 3n - 18$

6. $x^2 + 2x - 8$

7. $y^2 - 5y - 6$

8. $g^2 + 3g - 10$

9. $r^2 + 4r - 12$

10. $x^2 - x - 12$

11. $w^2 - w - 6$

12. $y^2 - 6y + 8$

13. $x^2 - 8x + 15$

14. $b^2 - 9b + 8$

15. $t^2 - 15t + 56$

16. $-4 - 3m + m^2$

Solve each equation. Check the solutions.

17. $x^2 - 6x + 8 = 0$

18. $b^2 - 7b + 12 = 0$

19. $m^2 + 5m + 6 = 0$

20. $d^2 + 7d + 10 = 0$

21. $y^2 - 2y - 24 = 0$

22. $p^2 - 3p = 18$

23. $h^2 + 2h = 35$

24. $a^2 + 14a = -45$

25. $n^2 - 36 = 5n$

26. $w^2 + 30 = 11w$