Practice

Multiplying a Polynomial by a Monomial

Find each product.

1. $2h(-7h^2 - 4h)$

2. $6pq(3p^2 + 4q)$

3. $-2u^2n(4u - 2n)$

4. $5jk(3jk + 2k)$

5. $-3rs(-2s^2 + 3r)$

6. $4mg^2(2mg + 4g)$

7. $-\dfrac{1}{4}m(8m^2 + m - 7)$

8. $-\dfrac{2}{3}n^2(-9n^2 + 3n + 6)$

Simplify.

9. $-2\ell(3\ell - 4) + 7\ell$

10. $5w(-7w + 3) + 2w(-2w^2 + 19w + 2)$

11. $6t(2t - 3) - 5(2t^2 + 9t - 3)$

12. $-2(3m^3 + 5m + 6) + 3m(2m^2 + 3m + 1)$

13. $-3g(7g - 2) + 3(g^2 + 2g + 1) - 3g(-5g + 3)$

14. $4z^2(z - 7) - 5z(z^2 - 2z - 2) + 3z(4z - 2)$

Solve each equation.

15. $5(2s - 1) + 3 = 3(3s + 2)$

16. $3(3u + 2) + 5 = 2(2u - 2)$

17. $4(8n + 3) - 5 = 2(6n + 8) + 1$

18. $8(3b + 1) = 4(b + 3) - 9$

19. $h(h - 3) - 2h = h(h - 2) - 12$

20. $w(w + 6) + 4w = -7 + w(w + 9)$

21. $t(t + 4) - 1 = t(t + 2) + 2$

22. $u(u - 5) + 8u = u(u + 2) - 4$

23. NUMBER THEORY Let x be an integer. What is the product of twice the integer added to three times the next consecutive integer?

INVESTMENTS **For Exercises 24–26, use the following information.**
Kent invested $5,000 in a retirement plan. He allocated x dollars of the money to a bond account that earns 4% interest per year and the rest to a traditional account that earns 5% interest per year.

24. Write an expression that represents the amount of money invested in the traditional account.

25. Write a polynomial model in simplest form for the total amount of money T Kent has invested after one year. (*Hint:* Each account has $A + IA$ dollars, where A is the original amount in the account and I is its interest rate.)

26. If Kent put $500 in the bond account, how much money does he have in his retirement plan after one year?