



GUIDED PRACTICE

SEE EXAMPLE 1

p. 487

Factor each polynomial. Check your answer.

1. $15a - 5a^2$

2. $10g^3 - 3g$

3. $-35x + 42$

4. $-4x^2 - 6x$

5. $12h^4 + 8h^2 - 6h$

6. $3x^2 - 9x + 3$

7. $9m^2 + m$

8. $14n^3 + 7n + 7n^2$

9. $36f + 18f^2 + 3$

SEE EXAMPLE 2

p. 488

10. **Physical Science** A model rocket is fired vertically into the air at 320 ft/s. The expression $-16t^2 + 320t$ gives the rocket's height after t seconds. Factor this expression.

SEE EXAMPLE 3

p. 489

Factor each expression.

11. $2b(b + 3) + 5(b + 3)$

12. $5(m - 2) - m(m - 2)$

13. $4(x - 3) - x(y + 2)$

SEE EXAMPLE 4

p. 489

Factor each polynomial by grouping. Check your answer.

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

15. $x^3 + 4x^2 + 2x + 8$

16. $10a^3 + 4a^2 + 5a + 2$

17. $7r^3 - 35r^2 + 6r - 30$

18. $2m^3 + 4m^2 + 6m + 12$

19. $4b^3 - 6b^2 + 10b - 15$

SEE EXAMPLE 5

p. 490

20. $6b^2 - 3b + 4 - 8b$

21. $2r^2 - 6r + 12 - 4r$

22. $6a^3 - 9a^2 - 12 + 8a$

23. $2m^3 - 6m^2 + 9 - 3m$

24. $3r - r^2 + 2r - 6$

25. $14q^2 - 21q + 6 - 4q$

PRACTICE AND PROBLEM SOLVING

Independent Practice

For Exercises	See Example
26–34	1
35	2
36–41	3
42–47	4
48–53	5

Factor each polynomial. Check your answer.

26. $36d^3 + 24$

27. $9y^2 + 45y$

28. $14x^3 + 63x^2 - 7x$

29. $-4d^4 + d^3 - 3d^2$

30. $-15f - 10f^2$

31. $-14x^4 + 5x^2$

32. $33d^3 + 22d + 11$

33. $21c^2 + 14c$

34. $-5g^3 - 15g^2$

35. **Finance** After t years, the amount of money in a savings account that earns simple interest is $P + Prt$, where P is the starting amount and r is the yearly interest rate. Factor this expression.

Extra Practice

Skills Practice p. EP16

Application Practice p. EP31

Factor each expression.

36. $-4x(x + 2) + 9(x + 2)$

37. $6a(a - 2) - 5b(b + 4)$

38. $5(3x - 2) + x(3x - 2)$

39. $-3(2 + b) + 4b(b + 2)$

40. $a(x - 3) + 2b(x - 3)$

41. $6y(y - 7) + (y - 7)$

Factor each polynomial by grouping. Check your answer.

42. $x^3 + 3x^2 + 5x + 15$

43. $2a^3 - 8a^2 + 3a - 12$

44. $10b^3 - 16b^2 + 25b - 40$

45. $n^3 - 2n^2 + 5n - 10$

46. $7x^3 + 2x^2 + 28x + 8$

47. $6x^3 + 18x^2 + x + 3$

48. $2d^3 - d^2 - 3 + 6d$

49. $2m^3 - 2m^2 + 3 - 3m$

50. $20 - 15x - 6x^2 + 8x$

51. $b^3 - 2b - 8 + 4b^2$

52. $5k^2 - k^3 + 3k - 15$

53. $6f^3 - 8f^2 + 20 - 15f$

54. **Art** Factor the expression for the area of the mural shown at right.