

c. parabola
 d. See Additional Answers.

5. $(a - b)(a^2 + ab + b^2)$
6. $(k + n)(k^2 - kn + n^2)$
7. $(y + 4)(y^2 - 4y + 16)$
8. $(c - 9)(c^2 + 9c + 81)$
9. $(d^2 + h)(d^4 - d^2h + h^2)$
10. $(p - w^4)(p^2 + pw^4 + w^8)$
11. $3c(c - 3)(c^2 + 3c + 9)$
12. $5j^2(j + 10)(j^2 - 10j + 100)$
13. $x(x + 1)(x - 1)$
14. $y(1 + y)(1 - y)$
15. difference of squares first:
 $(x^3 + y^3)(x^3 - y^3)$
 $= (x + y)(x^2 - xy + y^2)(x - y)$
 $(x^2 + xy + y^2)$ 4 factors
 difference of cubes first:
 $(x^2 - y^2)(x^4 + x^2y^2 + y^4)$
 $= (x + y)(x - y)(x^4 + x^2y^2 + y^4)$
 3 factors
16. difference of squares first:
 $(x^6 + y^6)(x^6 - y^6)$
 $= (x^6 + y^6)(x^3 + y^3)(x^3 - y^3)$
 $= (x^2 + y^2)(x^4 - x^2y^2 + y^4)(x + y)$
 $(x^2 - xy + y^2)$
 $(x - y)(x^2 + xy + y^2)$ 6 factors
 difference of cubes first:
 $(x^4 - y^4)(x^8 + x^4y^4 + y^8)$
 $= (x^2 + y^2)(x - y)(x + y)$
 $(x^8 + x^4y^4 + y^8)$ 4 factors
17. $(4x + 3)(3x + 4)$
18. $(3x + 2)(6x + 5)$
19. $(x - 5)(24x - 1)$
20. $(12x + 1)(x - 15)$
21. $(15x - 2)(2x + 3)$
22. prime
23. prime
24. $(x - 6)(9x - 2)$
25. $(3x - 4)(12x - 5)$
26. prime
27. -16 does not factor
28. 120 does not factor
29. 169 perfect square
 $(x - 17)(x - 4)$
30. -196 does not factor
31. 81 perfect square
 $(3x - 2)(6x - 1)$
32. 57 does not factor
33. -47 does not factor
34. 100 perfect square
 $(3x - 13)(x - 1)$
35. 6561 perfect square
 $(8x + 1)(x - 10)$
36. 3364 perfect square
 $(6x - 5)(8x + 3)$
37. $4(x + 2y)(x - 2y)$
38. $a^2b^2(b + a)(b - a)$

39. $(2x - 3y)^2$
40. $(x + 9)(x + 2)$
41. $(a + 11)(a - 8)$
42. $(7x - 6)(a + 1)(a - 1)$
43. $5(3x + 2)(2x + 5)$
44. $(x - y)(2x + 3y)$
45. $x(x^3 + 5x^2 - 2x + 10)$
46. $7x^2(x + 2)(x - 2)$
47. $(x^2 + 3)(x + 2)(x - 2)$
48. $(3x - 2)(5x + 6)$
49. $4(15x - 2)(x - 1)$
50. $(x + 1)(x - 1)(x + 5)(x - 5)$
51. $(x - 2)(16x - 3)$
52. $(x - 2)(7x^2 - 3)$
53. $(5x + 6)(x + 3)(x - 3)$
54. $9(3x + 2)^2$
55. prime
56. $(3x + 2y + 2a)(x + 4y)$
57. $(10 + x - y)(10 - x + y)$
58. prime
59. $(7a + b)(5a + 6b)$
60. $7(10 + x)(4 - x)$
61. $(a + b + c)(a - b - c)$
 $(a + b - c)(a - b + c)$
62. $(10x - 13)(20x + 77)$

75. $(x^2 + 5x + 3)(x^2 - 5x + 3)$
76. $(x^2 + 10x - 5)(x^2 - 10x - 5)$
77. $(x + 5)(x - 1)(x - 5)(x + 1)$
78. $(x^2 + x + 3)(x^2 - x + 3)$
79. $(x^2 + 2x + 2)(x^2 - 2x + 2)$
80. $(x + 3)(x - 2)(x - 3)(x + 2)$

63. $(x + 3 + y)(x + 3 - y)$
64. $(x - 5 - y)(x - 5 + y)$
65. $(a + b - 1)(a - b + 1)$
66. $(r + s + 2)(r - s - 2)$
67. $(p - 7 + 3k)(p - 7 - 3k)$
68. $(x - 2 - 10a)(x - 2 + 10a)$
69. $(x + 2y - 1)(x - 2y + 1)$
70. $(9 + x - y)(9 - x + y)$

71. $(x^2 + 3x + 4)(x^2 - 3x + 4)$
72. $(x^2 + 4x - 1)(x^2 - 4x - 1)$
73. $(x^2 + x + 6)(x^2 - x + 6)$
74. $(x^2 + 3x - 5)(x^2 - 3x - 5)$