

## Factoring Practice

**Factor completely.**

1.  $r^2 - 49$
2.  $d^2 + 10d + 9$
3.  $k^2 + 8kf - 9f^2$
4.  $5x^2 - 28x - 49$
5.  $a^2 - 14a + 49$
6.  $50k^3 - 40k^2 + 75k - 60$
7.  $125x^3 - 343y^3$
8.  $12g^3 + 15g^2 - 8g - 10$
9.  $-15x^3 - 21x$
10.  $5x^2 - 22x - 15$
11.  $49b^2 - 36$
12.  $a^2 + 6d + 9$
13.  $54c^3d^4 + 9c^4d^2$
14.  $d^2 + 11d + 28$
15.  $64x^3 + 1y^3$
16.  $6g^2 + 11g - 35$
17.  $32p^2 - 12p - 27$
18.  $36x^2 - 25$
19.  $512x^3 + 27y^3$
20.  $64x^3 + 512y^3$
21.  $8x^2 + 12x - 16$
22.  $21x^2 + 55x + 14$
23.  $8x^2 + 10x$
24.  $k^2 - 16h^2$
25.  $a^2 + ab - 56b^2$
26.  $4x^2 + 27x + 35$
27.  $a^2 - 8d + 16$
28.  $x^4 - 1y^4$
29.  $k^2 - 25h^2$
30.  $9x^2 - 16$
31.  $48k^3 - 64k^2 + 120k - 160$
32.  $54y^2 - 81y - 105$
33.  $4x^2 - 81y^5$
34.  $15x^2 - 16xy + 4y^2$
35.  $12d^2 + 4d - 1$
36.  $k^2 + kf - 2f^2$
37.  $16x^2 + 40x + 25$
38.  $16j^2 + 24j + 9$
39.  $625x^4 - 16y^4$
40.  $x^3 - 8y^3$
41.  $15g^3 + 10g^2 - 12g - 8$
42.  $x^2 + 12x + 35$
43.  $x^3 - 1000y^3$
44.  $a^2 - 10a + 25$
45.  $x^2 - x - 42$
46.  $160y^2 - 4y - 24$
47.  $1000x^3 + 1y^3$

48.  $21m^2 - 29m - 10$
49.  $6g^2 - 11gh - 10h^2$
50.  $x^4 - 1296y^4$
51.  $21w^9 + 35w^7$
52.  $36y^2 - 84y - 147$
53.  $49b^2 + 70b + 25$
54.  $3x^2 + 26x + 35$
55.  $x^2 - 7x - 30$
56.  $6g^3 + 8g^2 - 15g - 20$
57.  $4b^2 - 9$
58.  $81x^4 - 1296y^4$
59.  $w^2 + 18w + 77$
60.  $48g^2 - 22gh - 15h^2$
61.  $6x^2 + 5x + 1$
62.  $16m^2 - 24mn + 9n^2$
63.  $64b^2 + 144b + 81$
64.  $a^2 - 18d + 81$
65.  $3x^2 + 7x - 6$
66.  $k^2 + 7kf - 30f^2$
67.  $21g^2 + 32g - 64$
68.  $x^2 - 10xy + 24y^2$
69.  $x^3 - 216y^3$
70.  $40w^{11} + 16w^6$
71.  $45y^2 - 24y - 48$
72.  $729x^3 - 216y^3$
73.  $9x^3 + 12x + 4$
74.  $40p^2 - 13p - 36$
75.  $d^2 + 8d + 16$
76.  $48k^3 - 72k^2 + 60k - 90$
77.  $18g^2 + 33g - 40$
78.  $x^3 - 11x + 28$
79.  $10x^2 + 51x + 27$
80.  $100b^2 + 60b + 9$
81.  $120k^3 - 48k^2 + 160k - 64$
82.  $x^2 - 2x - 63$
83.  $x^2 - 6x + 8$
84.  $3x^3 + 3x^2 + x + 1$
85.  $6x^4 - 9x^3 - 36x^2 + 54x$
86.  $2x^3 + 4x^2 + 8x$
87.  $20x^2 + 22x - 12$
88.  $x^2 + 14x + 48$
89.  $k^2 - 4h^2$
90.  $-8x^2 - 12x - 8$
91.  $10x^2 + 51x + 56$
92.  $a^2 + ab - 2b^2$

## Simplify.

93.  $(8m + 7)^2$
94.  $(2x - 6)^2$
95.  $8p(-3p^2 + 6p - 2)$
96.  $(2n^2 + 4n + 4)(4n - 5)$
97.  $(2k + 3)(2k^2 - 4k - 3)$
98.  $(4x - 6y^3)^2$
99.  $(3x - 7)(3x - 5)$
100.  $5a^2(3a^4 + 3b)$