

6.4

$$\begin{array}{l}
 1) \quad 7x^2 - 48x + 36 \\
 \quad \quad 7x^2 - 6x - 42x + 36 \\
 \quad \quad x(7x - 6) - 6(7x - 6) \\
 \quad \quad (7x - 6)(x - 6)
 \end{array}$$

$$\begin{array}{l}
 3) \quad 7b^2 + 15b + 2 \\
 \quad \quad 7b^2 + b + 14b + 2 \\
 \quad \quad b(7b + 1) + 2(7b + 1) \\
 \quad \quad (7b + 1)(b + 2)
 \end{array}$$

$$\begin{array}{l}
 5) \quad 5a^2 - 13a - 28 \\
 \quad \quad 5a^2 + 7a - 20a - 28 \\
 \quad \quad a(5a + 7) - 4(5a + 7) \\
 \quad \quad (5a + 7)(a - 4)
 \end{array}$$

$$\begin{array}{l}
 7) \quad 2x^2 - 5x + 2 \\
 \quad \quad 2x^2 - 4x - x + 2 \\
 \quad \quad 2x(x - 2) - 1(x - 2) \\
 \quad \quad (x - 2)(2x - 1)
 \end{array}$$

$$\begin{array}{l}
 9) \quad 2x^2 + 19x + 35 \\
 \quad \quad 2x^2 + 14x + 5x + 35 \\
 \quad \quad 2x(x + 7) + 5(x + 7) \\
 \quad \quad (x + 7)(2x + 5)
 \end{array}$$

$$\begin{array}{l}
 11) \quad 2b^2 - b - 3 \\
 \quad \quad 2b^2 + 2b - 3b - 3 \\
 \quad \quad 2b(b + 1) - 3(b + 1) \\
 \quad \quad (b + 1)(2b - 3)
 \end{array}$$

$$\begin{array}{l}
 13) \quad 5k^2 + 13k + 6 \\
 \quad \quad 5k^2 + 10k + 3k + 6 \\
 \quad \quad 5k(k + 2) + 3(k + 2) \\
 \quad \quad (k + 2)(5k + 3)
 \end{array}$$

$$\begin{array}{l}
 15) \quad 3x^2 - 17x + 20 \\
 \quad \quad 3x^2 - 12x - 5x + 20 \\
 \quad \quad 3x(x - 4) - 5(x - 4) \\
 \quad \quad (x - 4)(3x - 5)
 \end{array}$$

$$\begin{array}{l}
 17) \quad 3x^2 + 17xy + 10y^2 \\
 \quad \quad 3x^2 + 15xy + 2xy + 10y^2 \\
 \quad \quad 3x(x + 5y) + 2y(x + 5y) \\
 \quad \quad (x + 5y)(3x + 2y)
 \end{array}$$

$$\begin{array}{l}
 19) \quad 5x^2 + 28xy - 49y^2 \\
 \quad \quad 5x^2 + 35xy - 7xy - 49y^2 \\
 \quad \quad 5x(x + 7y) - 7y(x + 7y) \\
 \quad \quad (x + 7y)(5x - 7y)
 \end{array}$$

$$\begin{array}{l}
 21) \quad 6x^2 - 39x - 21 \\
 \quad \quad 3(2x^2 - 13x - 7) \\
 \quad \quad 3(2x^2 - 14x + x - 7) \\
 \quad \quad 3(2x(x - 7) + 1(x - 7)) \\
 \quad \quad 3(x - 7)(2x + 1)
 \end{array}$$

$$\begin{array}{l}
 23) \quad 21k^2 - 87k - 90 \\
 \quad \quad 3(7k^2 - 29k - 30) \\
 \quad \quad 3(7k^2 + 6k - 35k - 30) \\
 \quad \quad 3(k(7k + 6) - 5(7k + 6)) \\
 \quad \quad 3(7k + 6)(k - 5)
 \end{array}$$

$$\begin{array}{l}
 25) \quad 14x^2 - 60x + 16 \\
 \quad \quad 2(7x^2 - 30x + 8) \\
 \quad \quad 2(7x^2 - 2x - 28x + 8) \\
 \quad \quad 2(x(7x - 2) - 4(7x - 2)) \\
 \quad \quad 2(7x - 2)(x - 4)
 \end{array}$$

$$\begin{array}{l}
 27) \quad 6x^2 + 29x + 20 \\
 \quad \quad 6x^2 + 5x + 24x + 20 \\
 \quad \quad x(6x + 5) + 4(6x + 5) \\
 \quad \quad (6x + 5)(x + 4)
 \end{array}$$

$$\begin{array}{l}
 29) \quad 4k^2 - 17k + 4 \\
 \quad \quad 4k^2 - 16k - k + 4 \\
 \quad \quad 4k(k - 4) - 1(k - 4) \\
 \quad \quad (k - 4)(4k - 1)
 \end{array}$$

$$\begin{aligned}
 31) \quad & 4x^2 + 9xy + 2y^2 \\
 & 4x^2 + 8xy + xy + 2y^2 \\
 & 4x(x + 2y) + y(x + 2y) \\
 & (x + 2y)(4 + y)
 \end{aligned}$$

$$\begin{aligned}
 33) \quad & 4m^2 - 9mn - 9n^2 \\
 & 4m^2 - 12mn + 3mn - 9n^2 \\
 & 4m(m - 3n) + 3n(m - 3n) \\
 & (m - 3n)(4m + 3n)
 \end{aligned}$$

$$\begin{aligned}
 35) \quad & 4x^2 + 13xy + 3y^2 \\
 & 4x^2 + 12xy + xy + 3y^2 \\
 & 4x(x + 3y) + y(x + 3y) \\
 & (x + 3y)(4x + y)
 \end{aligned}$$

$$\begin{aligned}
 37) \quad & 12x^2 + 62xy + 70y^2 \\
 & 2(6x^2 + 31xy + 35y^2) \\
 & 2(6x^2 + 21xy + 10xy + 35y^2) \\
 & 2(3x(2x + 7y) + 5y(2x + 7y)) \\
 & 2(2x + 7y)(3x + 5y)
 \end{aligned}$$

$$\begin{aligned}
 39) \quad & 24x^2 - 52xy + 8y^2 \\
 & 4(6x^2 - 13xy + 2y^2) \\
 & 4(6x^2 - 12xy - xy + 2y^2) \\
 & 4(6x(x - 2y) - y(x - 2y)) \\
 & 4(x - 2y)(6x - y)
 \end{aligned}$$