

$$\begin{array}{l}
 12y^2 + 17y + 6 \\
 12y^2 + 9y + 8y + 6 \\
 1. \quad 3y(4y+3) + 2(4y+3) \\
 (3y+2)(4y+3)
 \end{array}$$

$$\begin{array}{l}
 9x^2 - 6xt - 8t^2 \\
 2. \quad 9x^2 - 12xt + 6xt - 8t^2 \\
 3x(3x-4t) - 2t(3x-4t) \\
 (3x-4t)(3x-2t)
 \end{array}$$

$$\begin{array}{l}
 -2r^2 - 17tr + 8t^2 \\
 -[2r^2 + 17rt - 8t^2] \\
 3. \quad -[2r^2 + 16rt + rt - 8t^2] \\
 -[2r(r+8t) + t(r+8t)] \\
 -(2r+t)(r+8t)
 \end{array}$$

$$\begin{array}{l}
 12y^2 + 54y - 30 \\
 6[2y^2 + 9y - 5] \\
 4. \quad 6[2y^2 + 10y - y - 5] \\
 6[2y(y+5) - 1(y+5)] \\
 6(y+5)(2y-1)
 \end{array}$$

$$\begin{array}{l}
 49x^2 - 126xy - 81y^2 \\
 (7x)^2 + 2(7x)(-9y) - (9y)^2 \text{ [special pattern]} \\
 (7x-9y)^2
 \end{array}$$

$$\begin{array}{l}
 \text{also} \\
 5. \quad 49x^2 - 126xy - 81y^2 \\
 49x^2 - 63xy - 63xy - 81y^2 \\
 7x(7x-9y) - 9y(7x-9y) \\
 (7x-9y)(7x-9y) \\
 (7x-9y)^2
 \end{array}$$