

Do Now
factor completely:

$$(5a+1)^2 - 2(5a+1) - 3$$

$$25a^2 + 10a + 1 - 10a - 2 - 3$$

$$25a^2 - 4$$

$$(5a-2)(5a+2) \leftarrow$$

$$\text{let } x = 5a+1$$

$$x^2 - 2x - 3$$

$$(x-3)(x+1)$$

$$(5a+1-3)(5a+1+1)$$

$$(5a-2)(5a+2) \leftarrow$$

$$\textcircled{a} (a^2+1)^2 - 7(a^2+1) + 10$$

$$x = a^2 + 1$$

$$x^2 - 7x + 10$$

$$(x-5)(x-2)$$

$$(a^2+1-5)(a^2+1-2)$$

$$(a^2-4)(a^2-1)$$

$$(a-2)(a+2)(a-1)(a+1)$$

$$\textcircled{5} \quad 2(a+b)^2 + 5(a+b) - 3$$

$$x = a+b$$

$$2x^2 + 5x - 3$$

$$\begin{array}{|c} -6 \\ 5 \end{array}$$

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

$$2x(x+3) - 1(x+3)$$

$$(2x-1)(x+3)$$

$$(2(a+b)-1)(a+b+3)$$

$$(2a+2b-1)(a+b+3)$$

$$\begin{array}{l}
 \textcircled{1} \quad x^4 - x^2 - 12 \\
 (x^2)^2 - x^2 - 12 \\
 a = x^2 \\
 a^2 - a - 12 \\
 (a-4)(a+3) \\
 (x^2-4)(x^2+3) \\
 (x+2)(x-2)(x^2+3)
 \end{array}
 \left\{
 \begin{array}{l}
 x^4 - x^2 - 12 \\
 (x^2-4)(x^2+3) \\
 (x-2)(x+2)(x^2+3)
 \end{array}
 \right.$$

$$\textcircled{2} \quad x^2(x-1) - 2x(x-1) + (x-1)$$

$$a = x-1$$

$$ax^2 - 2ax + a$$

$$a(x^2 - 2x + 1)$$

$$a(x-1)(x-1) \\
 (x-1)(x-1)(x-1) = (x-1)^3$$

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