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9. $gh = ([2]x^2 + [3]x + [4])([3]x^2 + [2]x + [1]) \rightarrow$

$[2][3]x^4 + [2][2]x^3 + [2][1]x^2 + [3][3]x^3 + [3][2]x^2 + [3][1]x + [4][3]x^2 + [2][4]x + [4][1] \rightarrow$

$[1]x^4 + [4]x^3 + [2]x^2 + [4]x^3 + [1]x^2 + [3]x + [2]x^2 + [3]x + [4] \rightarrow$

$[1]x^4 + [3]x^3 + [0]x^2 + [1]x + [4] \rightarrow$

$[1]x^4 + [3]x^3 + [0]x^2 + [1]x + [4] \ mod \ x^3 + x + [1] \rightarrow$