

$(x + 1)(x + 2) = x^2 + 3x + 2$, so this answer is incorrect. Notice that $2x^2 + 6x + 4 = 2(x^2 + 3x + 2)$. Can you think of a factorization of $x^2 + 3x + 2$? Are there integers r and s so that $rs = 2$ and $r + s = 3$?