Incorrect. The GCF of the three terms is $6x$. So: $6x^3 + 18x^2 - 240x = 6x\left(x^2 + 3x - 40\right)$

You need to find two numbers whose product is $-40$ and whose sum is 3, in order to factor the trinomial into the product of two binomials. The correct answer is 5.