

A binomial in the form $a^3 - b^3$ can be factored as $(a - b)(a^2 + ab + b^2)$. Since $27x^3 = (3x)^3$, you should have replaced a by $3x$. Whenever you factor, remember to check your answer by multiplying the factors back together. The correct answer is $(3x - 4)(9x^2 + 12x + 16)$.