

$$\begin{aligned} a^3x - a^2b(x - y) - ab^2(b - z)b^3z \\ = (a^3x - a^2bx + a^2by - ab^6z + ab^5z^2) \\ = a(a^2x - abx + aby - b^6z + b^5z^2) \end{aligned}$$