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question 3 integration

a

i) $\int (x^2 - x)(x^3 + 6x) dx$
 $\int x^5 + 6x^3 - x^4 + 6x^3 - 6x^2 dx$
 $\frac{x^6}{6} - \frac{x^5}{5} + \frac{3x^4}{2} - 2x^3$ can be written

$$\frac{x^3(5x^3 - 6x^2 + 15x - 60)}{30} + C$$

ii) $\int (e^x + 5)(e^x + 6) dx$
 $\int e^{2x} + 6e^x + 5e^x + 30 dx$
 $\int e^{2x} + 11e^x + 30 dx$
 $\rightarrow \frac{e^{2x}}{2} + 11e^x + 30x + C$

iii) $\int_0^3 (x+6)(x-1) dx$
 $x^2 - x + 6x - 6$
 $\int x^2 + 5x - 6 dx$
 $\rightarrow \frac{x^3}{3} + \frac{5}{2}x^2 - 6x + 6$

let $x=3$
 $\frac{(3)^3}{3} + \frac{5(3)^2}{2} - 6(3) = 13.5$