ANDREW WHITE
1803827

(2a)(i) $\int (x^2-6x)(3x^2-x)\,dx$

$= \int 3x^4 - 19x^3 + 6x^2\,dx$

$= \frac{3x^5}{5} - \frac{19x^4}{4} + \frac{6x^3}{3} + c$

$= \frac{3x^5}{5} - \frac{19x^4}{4} + 2x^3 + c$

(ii) $\int (x^2+3x)(x^2+3x) + e^{0.5x} - \sin 2x\,dx$

$= \int x^4 + 6x^3 + 9x^2 + e^{0.5x} - \sin 2x\,dx$

$= \frac{x^5}{5} + \frac{6x^4}{4} + \frac{9x^3}{3} + 2e^{0.5x} + \frac{1}{2}\cos x + c$

$= \frac{x^5}{5} + \frac{6x^4}{4} + 3x^3 + 2e^{0.5x} + \frac{1}{2}\cos x + c$

(iii) $\int_0^3 (2x^2+3)(2x^2+3)(2x^2+3)\,dx$

$= \int_0^3 (4x^4+12x^2+9)(2x+3)\,dx$

$= \int_0^3 8x^5 + 24x^3 + 18x + 12x^4 + 36x^2 + 27\,dx$

$= \left[\frac{8x^6}{6} + \frac{24x^4}{4} + \frac{18x^2}{2} + \frac{12x^5}{5} + \frac{36x^3}{3} + 27x\right]_0^3$