

$$aiv) \int_2^4 (2x+3)(x+5) dx$$

$$\int_2^4 (2x^2 + 13x + 15) dx$$

$$= \left[\frac{2x^3}{3} + \frac{13x^2}{2} + 15x + C \right]_2^4$$

$$= \left[\frac{2 \times 4^3}{3} + \frac{13 \times 4^2}{2} + (15 \times 4) + C \right] - \left[\frac{2 \times 2^3}{3} + \frac{13 \times 2^2}{2} + (15 \times 2) + C \right]$$

$$= 128.67 - 61.33$$

$$= 67.34$$

$$bi) \int 4x \cos 3x dx =$$

$$4x(\sin 3x) + C$$

$$4x \left(\frac{1}{3} \sin 3x \right) + C$$