

e) -g

Q3

$$i) (x^8 + 2x^2)(3x^2 + x) dx$$

$$3x^{10} + x^9 + 6x^4 + 2x^3$$

$$= \frac{3x^{11}}{11} + \frac{x^{10}}{10} + \frac{6x^5}{5} + \frac{2x^4}{4} + C$$

$$ii) (e^x + 1)(e^x - 1) dx$$

$$e^{2x} - e^x + e^x - 1$$

$$\frac{1}{2} e^{2x} - \frac{1}{2} e^x + \frac{1}{2} e^x - x + C$$

$$iii) \int_2^9 (x+2)^3 + x - 1 dx$$

$$(x+2)(x+2)(x+2) dx$$

$$x^3 + 2x^2 + 2x + 4 (x+2)$$

$$x^3 + 2x^2 + 4x + 4 (x+2)$$

$$x^3 + 2x^2 + 4x^2 + 8x + 4x + 8$$

$$\int_2^9 x^3 + 6x^2 + 12x + 8 dx$$

$$\frac{x^4}{4} + \frac{6x^3}{3} + \frac{12x^2}{2} + 8x$$

$$156.25 + 250 + 150 + 40$$

$$= 596.25$$

$$4 + 16 + 24 + 16 = 60$$