

Page 4

$$P = \sqrt{\frac{xy}{T}} + 3 \quad (x)$$

$$\frac{P^2}{T} = \frac{xy}{T} + 3$$

~~$$\frac{P^2}{T} = \frac{xy}{T} + 3$$~~

$$\frac{P^2}{y} = \frac{xy}{y} + 3$$

$$\frac{P^2}{y} = x + 3$$

$$\frac{P^2}{y} - 3 = x$$

pag (3)

$$(i) \int x^4 + 3x^2 - 3x + 1 \, dx$$

~~$$\frac{x^5}{5} + \frac{3x^3}{3} - \frac{3x^2}{2} + x + C$$~~

$$= \frac{x^5}{5} + x^3 - \frac{3x^2}{2} + x + C$$

$$(ii) \int (x-1)(x-3) \, dx$$

$$x^2 - 3x - x + 3$$

$$x^2 - 4x + 3$$

$$\boxed{\frac{x^3}{3} - 4\frac{x^2}{2} + x + C}$$

$$(iii) \int 3 \sec^2 2x \, dx$$

$$= 3 \int \frac{1}{2} \tan 2x$$

$$= \int \frac{3}{2} \tan 2x$$

$$(iv) \int_0^4 (x+3)(x+2) \, dx$$

$$\int_0^4 (x^2 + 2x + 3x + 6) \, dx$$

$$\int_0^4 (x^2 + 5x + 6) \, dx$$

~~$$\frac{x^3}{3} + 5\frac{x^2}{2} + 6x$$~~

$$[21 + 80 + x]$$

$$\boxed{101.3}$$

$$(v) \int_2^3 (x+1) + e^x \, dx$$

$$\frac{6e^3 + 53 - 6e^2}{6}$$

$$[21.52981413-]$$