$$y = 5 \quad y = x^2 + 1$$

$$x$$

$$x$$

$$(i) \int x^2 \tan^{-1} x\, dx \quad (ii) \int \frac{1}{\sqrt{5 + 2x - x^2}}\, dx \quad (iii) \int \frac{x^2}{(x-1)(x^2 + 4x + 5)}\, dx$$

$$\int_{-2}^{0} |x^2 + x|\, dx$$

$$\int_{1}^{+\infty} \frac{dx}{(x-2)^{\frac{2}{3}}}$$

$$\lim_{x \to 0^+} \frac{x^x - 1}{x}$$

$$r = 3\sin\theta \quad r = 1 + \sin\theta$$