

1. Solve each of the following integrals.

$$(1) \int \frac{2\sqrt{x}}{\sqrt{x}} dx \quad (2) \int (\sin^{-1} x)^2 dx \quad (3) \int x \sin x \cos x dx$$

$$(4) \int \frac{\ln x}{\sqrt{x}} dx \quad (5) \int \frac{dx}{4x^2 + 4x + 5} \quad (6) \int \frac{x-1}{\sqrt{x}} dx$$

$$(7) \int \frac{\ln x}{x^4} dx \quad (8) \int \frac{x^2 + 1}{(x^2 - 2x + 2)^2} dx \quad (9) \int x\sqrt{1-x^4} dx$$

$$(10) \int x^{3/2} \ln(x) dx \quad (11) \int \sin(\ln x) dx \quad (12) \int x^3 e^{-x^2} dx$$

$$(13) \int e^{\cos x} \sin(2x) dx \quad (14) \int \sin(5x) \sin(x) dx \quad (15) \int \frac{\sin x}{\cos^3 x} dx$$

$$(16) \int x \sec x \tan x dx \quad (17) \int \frac{dx}{\cos x - 1} \quad (18) \int \frac{4^x + 10^x}{2^x} dx$$

$$(19) \int \frac{dx}{\sqrt{x}(2+\sqrt{x})^4} dx \quad (20) \int \frac{\sin x \cos x}{\sin^4 x + \cos^4 x} dx \quad (21) \int \frac{dx}{\sqrt{x} + x\sqrt{x}} dx$$

$$(22) \int (x + \sin x)^2 dx \quad (23) \int \sqrt{3-2x-x^2} dx \quad (24) \int x\sqrt{2-\sqrt{1-x^2}} dx$$

$$(25) \int \frac{\ln(x+1)}{x^2} dx \quad (26) \int \frac{e^{2x}}{1+e^x} dx \quad (27) \int \sqrt{1-\sin x} dx$$