

# Workbook



## Table of Contents

The Indefinite Integral .....	2
The Indefinite Integral .....	2

# The Indefinite Integral

## The Indefinite Integral

### Questions

Compute the following integrals:

1) a.  $\int 4dx$

b.  $\int \frac{4e}{\sqrt{5}} dx$

c.  $\int dx$

2) a.  $\int x^{-3} dx$

b.  $\int \frac{1}{x^4} dx$

c.  $\int \frac{1}{x^{10}} dx$

3) a.  $\int x^{\frac{1}{4}} dx$

b.  $\int \sqrt{x} dx$

c.  $\int \sqrt[4]{x^3} dx$

4) a.  $\int \frac{1}{x\sqrt{x}} dx$

b.  $\int \frac{1}{\sqrt[3]{x^2}} dx$

c.  $\int \frac{x^2}{\sqrt{x}} dx$

5) a.  $\int (2x^2 - x + 1) dx$

b.  $\int \left( \frac{3}{x^4} + 2\sqrt[3]{x} \right) dx$

c.  $\int (x^2 + 1)^2 dx$

6) a.  $\int (x^2 + 1)(x + 2) dx$

b.  $\int \frac{1 + 2x^2 + x^4}{x^2} dx$

c.  $\int \frac{x+1}{\sqrt{x}} dx$

7) a.  $\int (4x+1)^{10} dx$

b.  $\int (x^2 - 2x + 1)^{10} dx$

c.  $\int \frac{4}{(x-2)^5} dx$

8) a.  $\int \sqrt[3]{4x-10} dx$

b.  $\int \frac{10}{\sqrt{2x+4}} dx$

c.  $\int \frac{x}{(x-1)^4} dx$

9) a.  $\int \frac{dx}{\sqrt{x-1} - \sqrt{x}}$

b.  $\int \frac{xdx}{\sqrt{x+1} + 1}$

c.  $\int \frac{x-1}{\sqrt{x-1}} dx$

10) a.  $\int \frac{4}{x} dx$

b.  $\int \frac{1+x}{x^2} dx$

c.  $\int \left( 1 + \frac{1}{x} \right)^2 dx$

11) a.  $\int \frac{1}{2x-10} dx$

b.  $\int \frac{2x+2}{2x+1} dx$

c.  $\int \frac{4x+1}{16x^2-1} dx$

12) a.  $\int \frac{4x+1}{x+2} dx$

b.  $\int \frac{4x+1}{3x+2} dx$

c.  $\int \frac{x-1}{2x^2+x-3} dx$

13) a.  $\int (e^{4x+1}) dx$

b.  $\int \frac{e^x + e^{2x} + e^{3x}}{e^{4x}} dx$

c.  $\int \left( 4\sqrt{e^x} + \frac{1}{\sqrt[3]{e^{4x}}} \right) dx$

14) a.  $\int (e^{x+1})^2 dx$

b.  $\int \left( 4\sqrt{e^x} + \frac{1}{\sqrt[3]{e^{4x}}} \right) dx$

c.  $\int \frac{2^x + 4^{2x} + 10^{3x}}{5^x} dx$

15) a.  $\int \frac{1}{1+4x^2} dx$

b.  $\int \frac{1}{\sqrt{4-x^2}} dx$

c.  $\int \frac{x^2}{1-x^2} dx$

16) a.  $\int \cos(4x) dx$

b.  $\int \sin\left(\frac{x}{2}\right) dx$

c.  $\int (2\sin(4x) + \cos(x)) dx$

