

Find the following indefinite integrals (antiderivatives):

1. $\int \sqrt[3]{x} dx$

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

3. $\int \frac{1}{x\sqrt{x}} dx$

4. $\int x(x^2 + 3) dx$

5. $\int \frac{1}{2x^3} dx$

6. $\int \frac{1}{(2x)^3} dx$

7. $\int x^3 + 2 dx$

8. $\int x^2 - 2x + 3 dx$

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

10. $\int \sqrt[3]{x^2} dx$

Find dy/dx for the following

11. $y = \int_3^x \sin^3(t) dt$

12. $y = \int_3^{x^3} \sin(t) dt$

13. $y = \int_{2x}^{x^3} \tan(t) dt$

14. $y = \int_0^{\sin(x)} t^5 dt$