

Evaluate the indefinite integral. Check your result by differentiation.

1)  $\int \sqrt{1 - 4y} \, dy =$

2)  $\int x^3 \sqrt{x^2 - 9} \, dx =$

3)  $\int x^2 (x^3 - 1)^{10} \, dx =$

4)  $\int \frac{y^3}{(1 - 2y^4)^5} \, dy =$

5)  $\int (x^2 - 4x + 4)^{4/3} \, dx =$

$$6) \int x\sqrt{x+2} dx =$$

$$7) \int \frac{2r}{(1-r)^7} dr =$$

$$8) \int \sqrt{3-2x} x^2 dx =$$

$$9) \int \cos 4\theta d\theta =$$

$$10) \int 6x^2 \sin x^3 dx =$$

$$11) \int \sec^2 5x dx =$$

$$12) \int y \csc 3y^2 \cot 3y^2 dy =$$

$$13) \int \cos x (2 + \sin x)^5 dx =$$

$$14) \int \sqrt{1 + \frac{1}{3x} \frac{dx}{x^2}} =$$

$$15) \int 2 \sin x \sqrt[3]{1 + \cos x} dx =$$

$$16) \int \cos^2 t \sin t dt =$$

**Answer Key**

1)  $-\frac{1}{6}(1-4y)^{3/2} + c$

2)  $\frac{3}{8}(x^2-9)^{4/3} + c$

3)  $\frac{1}{33}(x^3-1)^{11} + c$

4)  $\frac{1}{32(1-2y^4)^4} + c$

5)  $\frac{3}{11}(x-2)^{\frac{11}{3}} + c$

6)  $\frac{2}{5}(x+2)^{5/2} - \frac{4}{3}(x+2)^{3/2} + c$

7)  $-\frac{2}{5}(1-r)^{-5} + \frac{1}{3}(1-r)^{-6} + c$

8)  $-\frac{3}{4}(3-2x)^{3/2} + \frac{3}{10}(3-2x)^{5/2} - \frac{1}{28}(3-2x)^{7/2} + c$

9)  $\frac{1}{4}\sin 4\theta + c$

10)  $-2\cos x^3 + c$

11)  $\frac{1}{5}\tan 5x + c$

12)  $-\frac{1}{6}\csc 3y^2 + c$

13)  $\frac{1}{6}(2+\sin x)^b + c$

14)  $-2\left(1+\frac{1}{3x}\right)^{3/2} + c$

15)  $-\frac{3}{2}\left(1+\cos x^{4/3}\right) + c$

16)  $-\frac{1}{3}\cos^3 t + c$