

Answer on Question #54552-Math -Integral Calculus

4. Evaluate

$$\int (x^2 - 1) dx = \frac{x^3}{3} - x + k.$$

Answer: (b) $\frac{x^3}{3} - x + k.$

5.

$$\int (1 - 3x)(1 + x) dx = \int (1 - 2x - 3x^2) dx = x - x^2 - x^3 + k.$$

Answer: (c) $x - x^2 - x^3 + k.$

6.

$$\int \left(\sqrt{x} - \frac{1}{\sqrt{x}} \right) dx = \frac{2}{3} x^{\frac{3}{2}} - x^{\frac{1}{2}} + k.$$

Answer: (a) $\frac{2}{3} x^{\frac{3}{2}} - x^{\frac{1}{2}} + k.$

7.

$$\int \left(px^3 + qx^2 + rk + \frac{w}{x} \right) dx = \frac{px^4}{4} + \frac{qx^3}{3} + rkx + w \ln x + C.$$

Answer: (d) none of these.

8.

$$\int (4x + 5)^6 dx = \frac{1}{4} \int (4x + 5)^6 d(4x + 5) = \frac{1}{27} (4x + 5)^7 + k.$$

Answer: (a) $\frac{1}{27} (4x + 5)^7 + k.$

9.

$$\int x(x^2 + 4)^5 dx = \frac{1}{2} \int (x^2 + 4)^5 d(x^2 + 4) = \frac{1}{12} (x^2 + 4)^6 + k.$$

Answer: (b) $\frac{1}{12} (x^2 + 4)^6 + k.$

10.

$$\int (x + a)^n dx = \frac{(x + a)^{n+1}}{n + 1} + k.$$

Answer: (a) $\frac{(x+a)^{n+1}}{n+1} + k.$