

AP Calculus – Quiz: Basic Integration Rules

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

$$\frac{1}{4} x^3 + C$$

2. $\int \cos x dx$

$$\sin x + C$$

3. $\int \sec x \tan x dx$

$$\sec x + C$$

4. $\int (\sec^2 x - \csc^2 x) dx$

$$\tan x + \cot x + C$$

5. $\int (6x^2 - 8x + 5) dx$

$$2x^3 - 4x^2 + 5x + C$$

6. $\int \frac{1}{|x|\sqrt{x^2-1}} dx$

$$\sec^{-1} x + C$$

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

$$-\frac{1}{3x^3} + C \text{ or } \frac{x^{-3}}{-3} + C$$

8. $\int \frac{1}{x} dx$

$$\ln |x| + C$$

9. $\int 6^x \ln 9 dx$

$$\frac{\ln 9 \cdot 6^x}{\ln 6}$$

10. $\int \frac{1}{4x} dx$

$$\frac{1}{4} \ln |x| + C$$