AP Calculus – Quiz: Basic Integration Rules

1. $\int \frac{2}{3}x^4 \, dx$ $\frac{2}{15}x^5 + C$

2. $\int \sin x \, dx$ $-\cos x + C$

3. $\int -\csc x \cot x \, dx$ $\csc x + C$

4. $\int \left(\sec^2 x - \csc^2 x\right) dx$ $\tan x + \cot x + C$

5. $\int \left(3x^2 + 5x + 1\right) dx$ $x^3 + \frac{5}{2}x^2 + x + C$

6. $\int \frac{1}{\sqrt{1-x^2}} \, dx$ $\sin^{-1} x + C$

7. $\int \frac{1}{x^3} \, dx$ $-\frac{1}{2x^2} + C$ or $\frac{x^{-2}}{-2} + C$

8. $\int \frac{1}{x} \, dx$ $\ln|x| + C$

9. $\int 6^x \, dx$ $6^x / \ln 6 + C$

10. $\int \frac{1}{3x} \, dx$ $\frac{1}{3} \ln|x| + C$