

## Assignment: Integration by Substitution

Evaluate each indefinite integral.

1)  $\int (5x^2 + 4)^5 \cdot 10x \, dx$

2)  $\int (x^5 - 5)^5 \cdot 5x^4 \, dx$

3)  $\int \frac{(5 + \ln -x)^3}{x} \, dx$

4)  $\int \frac{(5 + \ln 5x)^3}{x} \, dx$

5)  $\int -\frac{60x^2}{4x^3 + 1} \, dx$

6)  $\int \frac{24x}{4x^2 - 5} \, dx$

7)  $\int 4e^x \sec(e^x - 4) \tan(e^x - 4) \, dx$

8)  $\int -3\csc^2 -x \csc^2(\cot -x) \, dx$

9)  $\int \frac{2e^{2x}}{\sqrt{4 - e^{4x}}} \, dx$

10)  $\int \frac{12x^3}{1 + 9x^8} \, dx$

## Answers to Assignment: Integration

1)  $\frac{1}{6}(5x^2 + 4)^6 + C$

2)  $\frac{1}{6}(x^5 - 5)^6 + C$

3)  $\frac{1}{4}(5 + \ln -x)^4 + C$

4)  $\frac{1}{4}(5 + \ln 5x)^4 + C$

5)  $-5 \ln |4x^3 + 1| + C$

6)  $3 \ln |4x^2 - 5| + C$

7)  $4 \sec(e^x - 4) + C$

8)  $3 \cot(\cot -x) + C$

9)  $\sin^{-1} \frac{e^{2x}}{2} + C$

10)  $\tan^{-1} 3x^4 + C$

