§5.5: u-SUBSTITUTION

1.] Compute the following anti-derivative: $\displaystyle\int 3x^2(x^3+1)^{90}\,dx$

2.] Compute the following indefinite integral: $\displaystyle\int \sin^3(x)\cos(x)\,dx$

3.] Compute the following anti-derivative: $\displaystyle\int \frac{x^2}{\sqrt{9+4x^3}}\,dx$

4.] Compute the following indefinite integral: $\displaystyle\int \frac{\csc^2(x)}{\cot^3(x)}\ dx$

5.] Compute the following indefinite integral: $\int x\sqrt[3]{x+1}\,dx$

6.] Compute the following anti-derivative: $\int \dfrac{x}{\sqrt{4-x}}\,dx$

7.] Compute the following area: $\int_{-1}^{2} x^2 e^{x^3+1}\,dx$

8.] Compute the following definte integral: $\int_{1}^{e^2} \dfrac{\ln(x)}{x}\,dx$