

習題集 10

(對應 [張旭微積分](#) 積分前篇重點十：四大積分基本方法之二：三角置換法)

1. Find $\int \frac{dx}{(x^2+1)^2}$.

2. Find $\int_0^{\frac{1}{2}} \frac{dx}{(1-x^2)^{\frac{3}{2}}}$.

3. Find $\int \frac{x dx}{\sqrt{3-2x-x^2}}$.

4. Find $\int_0^1 \frac{dx}{\sqrt{3+2x-x^2}}$.

5. Find $\int_1^2 \frac{\sqrt{x^2-1}}{x} dx$.

6. Find $\int \frac{\sqrt{1-x^2}}{x^4} dx$.

7. Find $\int \frac{dx}{(x^2+2)^{\frac{3}{2}}}$.

8. Find $\int_3^{3\sqrt{3}} \frac{x^3 dx}{\sqrt{x^2+9}}$.

9. Find $\int_{-1}^0 \frac{dx}{(x^2+2x+2)^3}$.

10. Find $\int \frac{dx}{e^x \sqrt{4+e^{2x}}}$.