

Integration by substitution

Find the following integrals:

1. $\int x(x-1)^8 dx$

2. $\int \frac{x}{(x+4)^6} dx$

3. $\int \sqrt{2x+1} dx$

4. $\int (7x-2x^3)e^{x^4-7x^2} dx$

5. $\int \sec^2(2x) \tan(2x) dx$

6. $\int (\cos(3x) - x^2)(\sin(3x) - x^3)^5 dx$

7. $\int \sin x \cos^2 x dx$

8. $\int \tan x dx$

Integration bee competition questions

1. $\int \sin^4 x \cos^3 x \, dx$

2. $\int \cos^5 x \, dx$

3. $\int \tan^3 x \, dx$

4. $\int \sec^7 x \tan x \, dx$

5. $\int 7x^3 \cos(2 + x^4) - 8x^3 e^{2+x^4} \, dx$

6. $\int \cos^4 x \, dx$