The Substitution Method for integration
Homework for video (2)
Solutions in video (3)

1. Mark each of the following statements as True or False.

(a) $\int f(x)+g(x)\,dx = \int f(x)\,dx + \int g(x)\,dx$

(b) $\int f(x)-g(x)\,dx = \int f(x)\,dx - \int g(x)\,dx$

(c) $\int f(x)\cdot g(x)\,dx = \int f(x)\,dx \cdot \int g(x)\,dx$

(d) $\int \frac{f(x)}{g(x)}\,dx = \frac{\int f(x)\,dx}{\int g(x)\,dx}$

(e) $\int K\cdot f(x)\,dx = K\cdot \int f(x)\,dx$

K: constant

Evaluate the following indefinite integrals. Check each of your answers.

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

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

4. $\int 5e^x\,dx$

5. $\int \tan x\,dx$

6. $\int \tan x\cdot \sec^2 x\,dx$

7. $\int \tan^7 x\cdot \sec^2 x\,dx$

8. $\int \tan x\cdot \sec^5 x\,dx$

9. $\int \tan x\cdot \sec x\,dx$

10. $\int \sec^2 x\,dx$

11. $\int -\cot x\,dx$