Oefeningen partiële integratie

0.1 Niveau 2

Oefening 1. Bereken volgende onbepaalde integralen via partiële integratie:

1. $\int \left(3x + x^2\right) e^x \, dx = \ldots\ldots$

2. $\int \operatorname{bgtan} x \, dx = \ldots\ldots$

3. $\int \operatorname{bgsin} \theta \, d\theta = \ldots\ldots$

4. $\int \ln \sqrt{x} \, dx = \ldots\ldots$

5. $\int e^x \cos 3x \, dx = \ldots\ldots$

6. $\int \frac{\ln t}{t^2} \, dt = \ldots\ldots$

Oefening 2.

1. Bereken $\int \operatorname{bgtan} 5x \, dx$.

Meerkeuze:

(a) $x \operatorname{bgtan} 5x - \frac{1}{10} \ln|1 + 25x^2| + c$

(b) $x \operatorname{bgtan} 5x - \frac{1}{12} \ln|1 + 25x^2| + c$

(c) $x \operatorname{bgtan} 5x - \frac{1}{14} \ln|1 + 25x^2| + c$

(d) $x \operatorname{bgtan} 5x + \frac{1}{10} \ln|1 + 25x^2| + c$

(e) $x \operatorname{bgtan} 5x + \frac{1}{12} \ln|1 + 25x^2| + c$

(f) $x \operatorname{bgtan} 5x + \frac{1}{14} \ln|1 + 25x^2| + c$

2. Bereken $\int e^{3x} \cos 5x \, dx$.

Meerkeuze:

(a) $\frac{e^{3x}(2\cos 5x + 5\sin 5x)}{29} + c$

(b) $\frac{e^{3x}(3\cos 5x + 5\sin 5x)}{34} + c$

(c) $\frac{e^{3x}(\cos 5x + 3\sin 5x)}{20} + c$

(d) $\frac{e^{3x}(\cos 5x + 2\sin 5x)}{15} + c$

(e) $\frac{e^{3x}(2\cos 5x + 7\sin 5x)}{53} + c$

(f) $\frac{e^{3x}(3\cos 5x + 7\sin 5x)}{58} + c$

Bron: https://github.com/ptgressman/math104 (MIT License Copyright (c) 2019 Philip Gressman)

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