Integreren Oefening 1 Antwoorden

1. $-\frac{1}{2}\cos(2x-1)+c$
2. $x-\frac{2}{3}\sin 3x+c$
3. $\frac{1}{5}(x^2-3)^5+c$
4. $-\frac{5}{3}x^{-3}+c$
5. $4\sqrt{x}+c$
6. $\frac{1}{4}x^2-\frac{5}{2}x+c$
7. $-\frac{2}{3}(\cos x)^{1\frac{1}{2}}+c$
8. $-\frac{1}{2}(\sin x)^{-2}+c$
9. $\frac{1}{3}(2x-1)^{1\frac{1}{2}}+c$
10. $-\frac{1}{9}(\cos x)^9+c$

1. $\int_1^2 \sqrt{x}\,dx=[\frac{2}{3}x^{1\frac{1}{2}}]_1^2=1\frac{1}{3}\sqrt{2}-\frac{2}{3}=1.219$

2. $\int_0^2 -(x^2-2x-1)dx=[-\frac{1}{3}x^3+x^2+x]_0^2=3\frac{1}{3}$

3. $\int_\pi^{2\pi}(1-(1+\sin x)dx=\int_\pi^{2\pi}-\sin x dx=[\cos x]_\pi^{2\pi}=2$

4. $\int_1^4 \frac{1}{x^2}dx=[-x^{-1}]_1^4=\frac{3}{4}$

5. $\int_{-2}^2 (3-x^2-(-1))dx=[4x-\frac{1}{3}x^3]_{-2}^2=10\frac{2}{3}$

6. $\int_0^2 (6-x^2-x)dx=[6x-\frac{1}{3}x^3-\frac{1}{2}x^2]_0^2=7\frac{1}{3}$

7. $\int_0^1 (\sqrt{x}-x^2)dx=[\frac{2}{3}x^{1\frac{1}{2}}-\frac{1}{3}x^3]_0^1=\frac{1}{3}$

8. $\int_1^{100}\frac{1}{x^2}dx=[-\frac{1}{x}]_1^{100}=0,99$

9. $\int_{-6}^{-2}(-2-((x+4)^2-6))dx=\int_{-6}^{-2}(-x^2-8x-12)dx=[-\frac{1}{3}x^3-4x^2-12x]_{-6}^{-2}=19\frac{2}{3}$

10 $\int_0^{\frac{1}{2}\pi}1dx+\int_{\frac{1}{2}\pi}^{\pi}(1+\cos x)dx=\frac{1}{2}\pi+[x+\sin x]_{\frac{1}{2}\pi}^{\pi}=\pi-1$