Definite Integrals

Calculate the definite integral(s).

1. $\displaystyle\int_0^2 \left(x^5 - x^3\right)\ dx \quad =$

2. $\displaystyle\int_0^{\pi/3} \left(\cos(x) + \sin(x)\right)\ dx \quad =$

3. $\displaystyle\int_1^{16} \left(\frac{t+1}{\sqrt{t}}\right)\, dt \quad =$

4. $\displaystyle\int_0^{4} e^x \left(3 + x\, e^{-x}\right)\, dx \quad =$

5. $\int_{-1}^{2} |\, x^3 \,|\, dx \quad =$

See next page.

6. $\displaystyle\int_0^{\pi/4} \frac{1+\sin(x)}{\cos^2(x)}\,dx \quad =$