Evaluate the integrals

1. $\displaystyle\int_{-\infty}^{-1}\frac{dx}{(x-1)^4}$

2. $\displaystyle\int_{0}^{\infty} xe^{-x}\,dx$

3. $\displaystyle\int_{0}^{\infty}\frac{6x}{1+x^6}\,dx$