

Railway Engineering Mathematics

Tutorial Sheet 17

Evaluate the following integrals using integration by parts:

1. $\int -4x e^{7x} \, dx$

2. $\int 12x \cos(9x) \, dx$

3. $\int 5x^2 \ln(2x) \, dx$

4. $\int_{0.4}^{5.6} -2t \sin(0.3t) + 12t^3 \, dt$

5. $\int_{0.5}^{3.6} 2x e^{-0.7x} \, dx$

6. $\int_0^{\frac{\pi}{2}} 2\theta \sin(\theta) \, d\theta$

7. $\int \frac{4x}{e^{3x}} \, dx$

8. $\int_{-0.2}^{0.7} -9x e^{-0.45x} + 3.5x^2 \, dx$