

Problem Set 76

2. $F = \int_0^3 9800(3-y)\left(\frac{1}{3}y+2\right)dy$

4. $\frac{\sin^3 x}{3} - \frac{\sin^5 x}{5} + C$

6. $x + C$

8. discontinuous at $x = 2$

10. $f(x) = 4 + \sum_{n=1}^{\infty} (2 + 2^n) \frac{x^n}{n!}$

12. 1 unit²

14. $\frac{1024\pi}{5}$ unit³

16. $x = 1, e^{-2}$

18. $\frac{1}{2}xe^{2x} - \frac{1}{4}e^x + \frac{1}{2}e^{x^2} + C$

22. $V = \frac{4}{3}\pi r^3 = \frac{32\pi}{3} \text{ cm}^3$

24. $\ln 2$ unit²