

Problem Set 74

2. $\frac{27}{2}$ joules

4. 13,500 newtons

6. $\frac{\pi}{5}$ units³

8. $\sum_{n=0}^{\infty} \frac{(\ln 3)^n x^n}{n!}$

10. $3.5^x \ln 3.5 - \frac{2}{x \ln 3}$

12. $\frac{3}{\sqrt{1-9x^2}} - \frac{1}{2\sqrt{1-x}(x \sin x)}$

$$- \frac{\sqrt{1-x}(x \cos x + \sin x)}{(x \sin x)^2}$$

14. $e^{2x}(2x-1) + C$

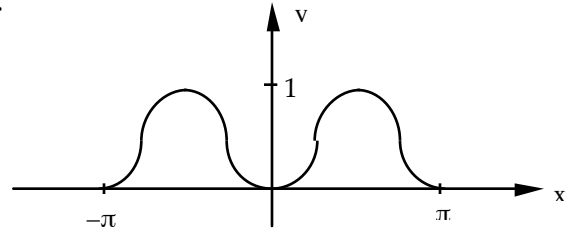
16. $-3 \ln |\cos x| + C$
or $3 \ln |\sec x| + C$

18. $-\frac{1}{3}(1+2\cos x)^{3/2} + C$

20a. $\sin^2 x$

b. $-\pi, 0, \pi$

c.



d. Domain: $\{x \in \mathfrak{R} \mid -\pi \leq x \leq \pi\}$

Range: $\{y \in \mathfrak{R} \mid 0 \leq y \leq 1\}$

22. $y = \frac{1}{2}x - \frac{1}{2}$

24. A