

Problem Set 62

2. $\frac{1}{1+x} = 1 - x + x^2 - x^3 + x^4 - \dots$

4. 600 joules

6. 18 joules

8. $a = -1; \quad b = 3$

10. $\frac{1}{2} \sin\left(2x - \frac{\pi}{2}\right) + C$

12. $\frac{2}{3} \sin^{\frac{3}{2}} t + C$

14. $\frac{9}{2} \text{ units}^2$

16a. $a = 1; \quad b = 3$

b. $a = 3; \quad b = 5$

18. e

20. $y' =$

$$e^{\sin x} (2x - 1)^{-\frac{3}{2}} (-1 + (2x - 1) \cos x) + \frac{1}{x}$$

22. D

24. $g(x) = \sqrt{x^2 + 1}$