

Problem Set 81

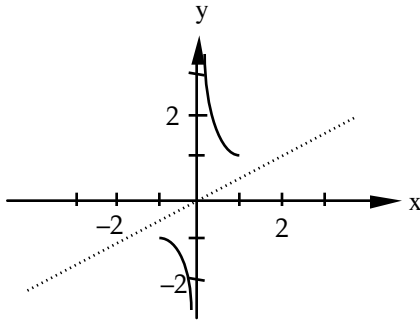
2. $b = 6$

4. $\frac{243}{5}\pi \text{ units}^3$

6. $24\pi \text{ units}^3$

8. $\frac{166}{15}\pi \text{ units}^3$

10.



12. 3

14. $y = (\ln 16)x + (4 - \ln 256)$
or $y \approx 2.773x - 1.545$

16. $\frac{3x^2 - 1}{x^2 - 1} + \ln|x^3 - x| + 2^{2x-2} \ln 2 + \frac{1}{x^2 + 1}$

18. 0

20. D

22. $|k| > \sqrt{5}$

24. Domain: $\{x \in \mathfrak{R} \mid x \geq 1\}$
Range: $\{y \in \mathfrak{R} \mid -1 \leq y \leq 1\}$