

Calculus — Problem Set 55

2. $\sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{(2n+1)}$

4. 2 units²

6. $\sqrt{x^2 + x + 1} + C$

8. $\sec^3 x + C$

10. $2e^{2x} \tan x (\sec^2 x + \tan x)$

12.

$A_{\max} = 9\text{cm}^2$

$Dim = 4.2426\text{cm} \times 2.1213\text{cm}$

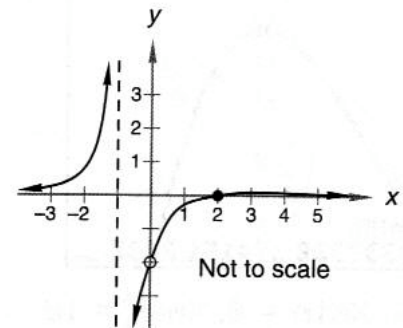
14. $240\pi \frac{\text{cm}^2}{\text{s}}$

16. e^2

18. C

20. 2

22.



24. $g(f(x)) + C$

Calculus — Problem Set 56

2. $1728 \frac{\text{units}^4}{\text{s}}$

4. $t = 1.25\text{s}$
Max height = 125 ft

6. $\frac{14}{3}$

8. $\frac{1}{28} \sin^7 t + C$

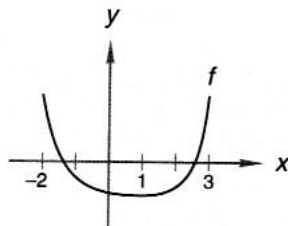
10. $\frac{2}{3} (x^3 - 2)^{3/2} + C$

12. $\frac{2}{a} [1 + \sin(ax)]^{1/2} + C$

14. $\frac{\cos x + 1}{\sin x + x} - 2 \csc(2x) \cot(2x)$

16. $\sum_{n=0}^{\infty} (-1)^n \frac{x^{2n}}{(2n)!}$

18.



20. ≈ -0.03208

22. ≈ 603448.4645

24. $\log_3 x = \frac{\ln x}{\ln 3}$