

Problem Set 110

2. $2\pi(3e^2 - 1)$ units³

4. $f(x) = \ln|x| + 1$

6a. $v(t) = -9.8t + 30$
 $h(t) = -4.9t^2 + 30t + 60$

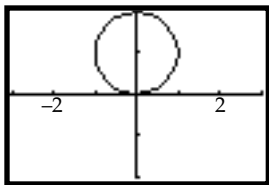
b. 3.061 sec

c. 4.649 sec

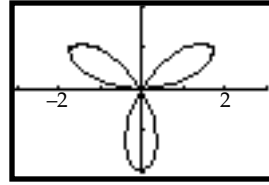
8. $\frac{8}{27} \left(10\sqrt{10} - \frac{13\sqrt{13}}{8} \right)$ units

10. $f'(1.4) \approx 3.372$

12. $r = \frac{3}{\sin\theta - 2\cos\theta}$



14.



16.

18. 19

20. Diverges

22. Maximum: (0.880, 4.061)
 Minimum: (-1, -18)

24. $3 \tan^2 x \sec^2 x - \frac{\pi \cos(\pi x)}{1 + cx}$
 $+ \frac{c[1 + \sin(\pi x)]}{(1 + cx)^2}$