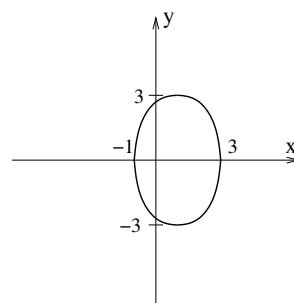
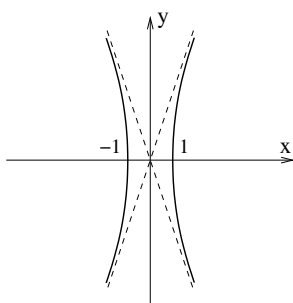
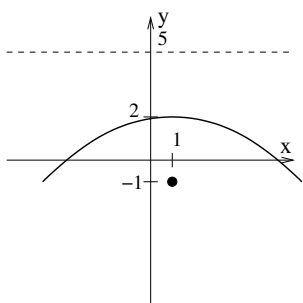


1. See section 11.4 (example 1). $\frac{\pi}{16}$
2. See section 11.4 (example 4). $\frac{15\pi}{4}$
3. See section 11.5 (example 1). $y = -\frac{1}{12}(x-1)^2 + 2$
4. See section 11.5 (example 4).
Vertices: $(1, 0)$, $(-1, 0)$. Foci: $(\sqrt{10}, 0)$, $(-\sqrt{10}, 0)$. Asymptotes: $y = 3x$, $y = -3x$.
5. See section 11.5 (examples 2, 6, and 7). Vertices: $(3, 0)$, $(-1, 0)$, $(1, 3)$, $(1, -3)$. Foci: $(0, \sqrt{5})$, $(0, -\sqrt{5})$.



6. See section 12.1 (examples 4 and 6). (a) Converges, 1 (b) Diverges
7. See section 12.2 (example 3 and 8). (a) Divergent (b) Convergent, $\frac{\sqrt{5}}{4}$
8. (a) Convergent, use the comparison test (see section 12.4)
(b) Convergent, use the alternating series test (see section 12.5)
(c) Convergent, use the ratio test (see section 12.6)
(d) Divergent, use the limit comparison test (see section 12.4)
(e) Convergent, use the integral test (see section 12.3)
(f) Divergent, use the root test (see section 12.6)
9. See section 12.8. (a) $r = 1$, $[-1, 1]$ (b) $r = 3$, $[-3, 3]$
10. See section 12.9 (example 1). $\sum_{n=0}^{\infty} (-4)^n x^{n+1}$, $\left(-\frac{1}{4}, \frac{1}{4}\right)$
11. See section 12.9 (example 8). $\sum_{n=0}^{\infty} (-1)^n \frac{x^{4n+1}}{4n+1}$
12. See section 12.10 (example 3). $\sum_{n=0}^{\infty} (-1)^n (x-1)^n$