

Answers to Odd-Numbered Exercises

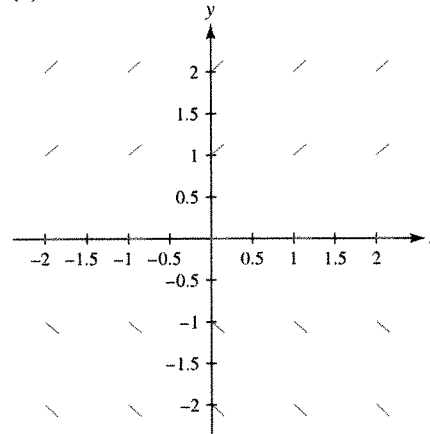
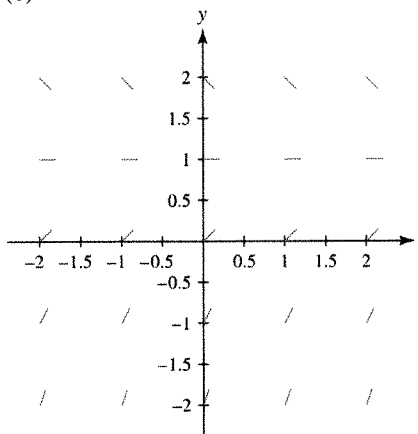
CHAPTER 1

Section 1.2, page 6

1. Order is 2.
3. Order is 1.
5. $k = -2$
7. $k = \frac{1}{2}$
9. (b) $C = 2e^{-1}$
11. (b) $C_1 = 3, C_2 = 1$
13. $c = 0$ and $c = 1$
15. $r = 1$ and $r = 2$
17. $y = e^{2t} + e^{-2t} = 2 \cosh 2t$
19. $y = 3e^{-2t}$
21. $m = -2, y_0 = 1, y(t) = 2 - t$
23. $t_{\text{impact}} = \sqrt{2y_0/g}, v_{\text{impact}} = -\sqrt{2gy_0}$

Section 1.3, page 12

1. (a) Autonomous
(b) $y = 1$
(c)
3. (a) Autonomous
(b) $y = 0, y = \pm\pi, y = \pm2\pi, \dots$
(c)



5. (a) Autonomous
(b) There are none.

