

ANSWER KEY

- | | <u>Form A</u> | <u>Form B</u> |
|-----|--|--|
| 1. | A | B |
| 2. | D | A |
| 3. | D | B |
| 4. | C | A |
| 5. | C | D |
| 6. | A | D |
| 7. | C | D |
| 8. | B | C |
| 9. | $y = -1 - \sqrt{2x - x^3 + 2x^4 - 2}$ | |
| 10. | (a) $k = 25$
(d) $u = -2e^{-9\pi/2}$ | (b) $\gamma = 30$
(e) $\mu = 1$ |
| 11. | (a) $y = -3, 1, 2$
$y = 2$ is unstable. | (b) $y = -3$ is semistable, $y = 1$ is (asymptotically) stable,
(c) $\lim_{t \rightarrow \infty} y = 1$ |
| | | (d) $y(2500) = 2$ |
| 12. | (a) $y = C_1 e^{4t} + C_2 t e^{4t}$
(b) $y = 2e^{4(t-735)} - 9(t-735)e^{4(t-735)}$
(c) $\lim_{t \rightarrow \infty} y = -\infty$ | |
| 13. | (a) $y = C_1 e^{-t} + C_2 e^{3t}$
(b) $y = C_1 e^{-t} + C_2 e^{3t} - \frac{1}{4} t e^{-t} - 1$
(c) $Y = (At + B) e^{-t} \cos 2t + (Ct + D) e^{-t} \sin 2t$ | |