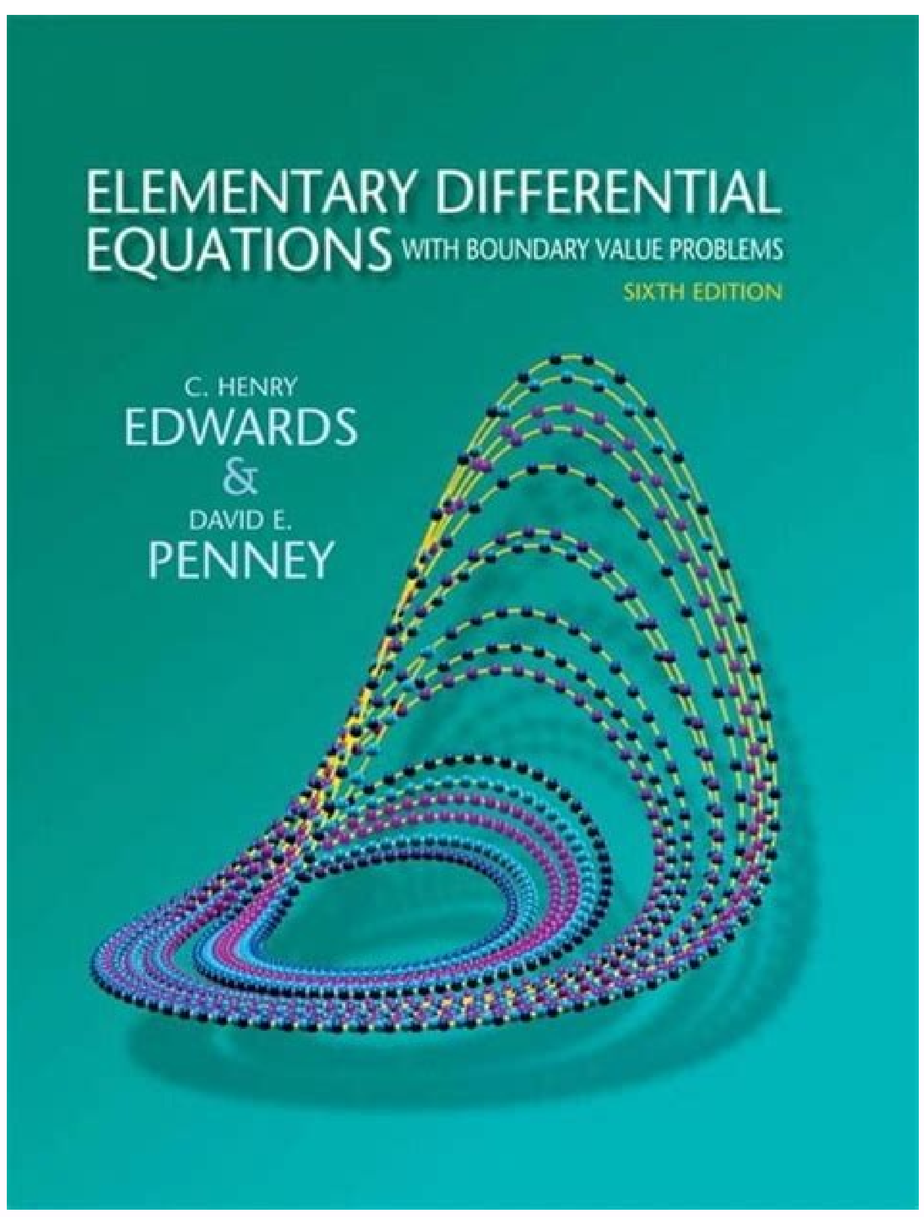
Elementary differential equations 11th edition slader solutions pdf answers

149632795852 22598447.280702 25854726.378788 82932057100 28064348.013333 6272246900 17655496.85 9954707.7272727 45776348596 763270334 2679755880 60156096368 11123837.836066 6310679.2272727 43789881429 4044755520 141954808110 12636717.195876 7969216.0625 18612121584 4648283.6129032 82665051.428571 41255570474



a)

1. $a < 0$

$y(a - y^2) = 0 \Rightarrow y = 0$ asym. stable

2. $a = 0$

$-y^3 = 0 \Rightarrow y = 0$ asymptotically stable

3. $a > 0$

$y(a - y^2) = 0 \Rightarrow y = 0$ unstable , $y = \pm\sqrt{a}$ asym. stable ,

$f(a, y)$ vs. y graphs with phase line inside.

b) Plots of some solutions inside.

c) Bifurcation diagram inside.

(a) $(1, 1)$, $(-1, 1)$

(b), (c)

(1,1): $\begin{bmatrix} 0 & -1 \\ 2 & -2 \end{bmatrix}$, $\lambda_1 = -1 + i$ and $\lambda_2 = -1 - i$, a **spiral point**, which is **asymptotically stable**

(-1,1): $\begin{bmatrix} 0 & -1 \\ -2 & -2 \end{bmatrix}$, $\lambda_1 = -1 + \sqrt{3}$ and $\lambda_2 = -1 - \sqrt{3}$, a **saddle point**, which is **unstable**.

(a) $x(t) = -\frac{2}{3}\cos 10t + \frac{1}{2}\sin 10t$ ft.

(b) $\frac{5}{6}$ ft.

(c) 15.

(d) $\frac{1}{10}\tan^{-1}\frac{4}{3}$ s

(e) $\tan^{-1}\frac{3}{40} + \frac{2n+1}{20}\pi$ s, for every $n = 0, 1, 2, \cdots$.

(f) -0.5969 ft.

(g) -5.816 ft/s.

(h) 59.69 ft/s^2.

(i) $\frac{25}{3}$ ft/s.

(j) $\frac{12n \pm 1}{30}\pi - \frac{\sin^{-1}(3/5)}{10}$ for every $n = 1, 2, 3, \cdots$.

(k) $\frac{12n+1}{30}\pi - \frac{\sin^{-1}(3/5)}{10}$ for every $n = 1, 2, 3, \cdots$.