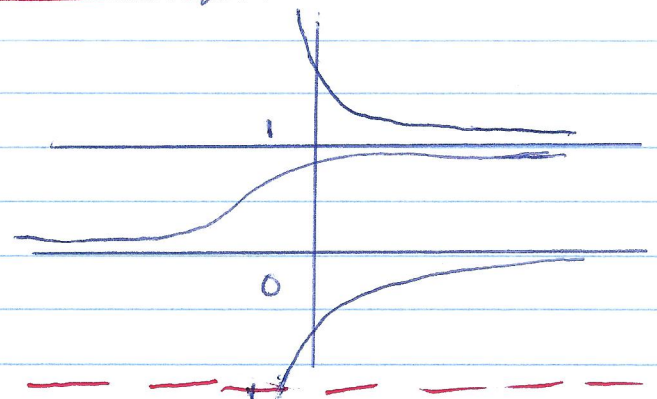
Answers to

Even Non-Web Assign HW

§ 2.1

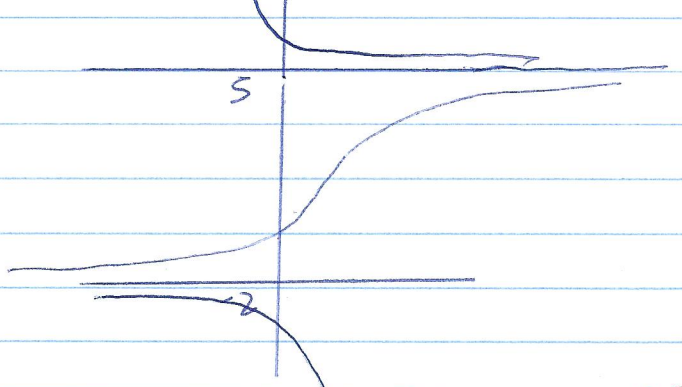
22) 1 stable

0 semi-stable



24) 5 stable

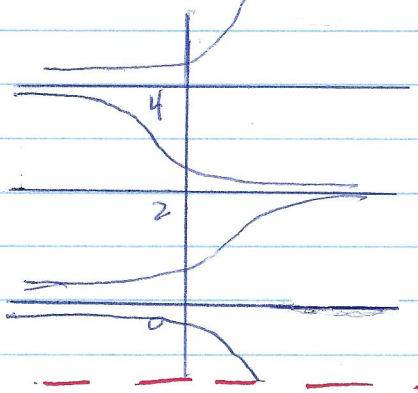
-2 unstable



26) 4 unstable

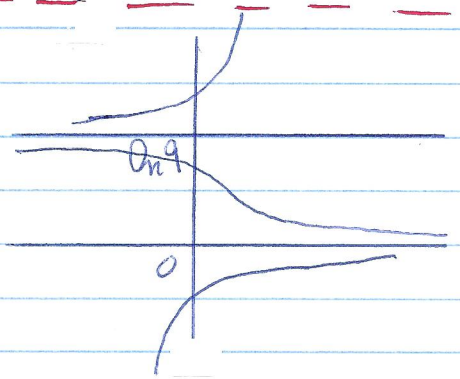
2 stable

0 unstable



28) $\ln 9$ unstable

0 stable



40) $\frac{mg}{k}$ mg/k $\lim_{t\to\infty} v = \frac{mg}{k}$

0

§2.2

6) $y = \frac{1}{x^2 + C}$

12) $y^2 = -\frac{1}{6}\tan^2(3x) + C$

OR

$y^2 = -\frac{1}{6}\sec^2(3x) + C$

u-substitution two possibilities for u.

34) $y = \sqrt{2\cos x - 1}$, eq $\left(-\frac{\pi}{3}, \frac{\pi}{3}\right)$

§2.3

14) $y = -\frac{1}{2x}e^{-x}\cos(2x) + \frac{Ce^{-x}}{x}$ for $0 < x < \infty$ (or $-\infty < x < 0$).

Entire solution is transient.

18) $y = \sec x + C \cdot \csc x$

eq $0 < x < \frac{\pi}{2}$.

No transient term (clearly)

36) $y = \sin x \cos x - \cos x$

$I = \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$