

$$[2] \quad y = e^{-3x} \cos 2x - 2e^{-3x} \sin 2x + 2e^{-2x}$$

$$y' = -3e^{-3x} \cos 2x + 2e^{-3x} \sin 2x$$

$$-4e^{-3x} \cos 2x + 6e^{-3x} \sin 2x - 4e^{-2x}$$

$$= -7e^{-3x} \cos 2x + 8e^{-3x} \sin 2x - 4e^{-2x} \quad (*)$$

$$y'' = 21e^{-3x} \cos 2x + 14e^{-3x} \sin 2x$$

$$+ 16e^{-3x} \cos 2x - 24e^{-3x} \sin 2x + 8e^{-2x}$$

$$= 37e^{-3x} \cos 2x - 10e^{-3x} \sin 2x + 8e^{-2x} \quad (*)$$

$$y'' + 6y' + 13y = \boxed{37e^{-3x} \cos 2x - 10e^{-3x} \sin 2x + 8e^{-2x} - 42e^{-3x} \cos 2x + 48e^{-3x} \sin 2x - 24e^{-2x} + 13e^{-3x} \cos 2x - 26e^{-3x} \sin 2x + 26e^{-2x}} \quad (*)$$

$$= \boxed{8e^{-3x} \cos 2x + 12e^{-3x} \sin 2x + 10e^{-2x}} \neq 10e^{-2x} \quad (*)$$

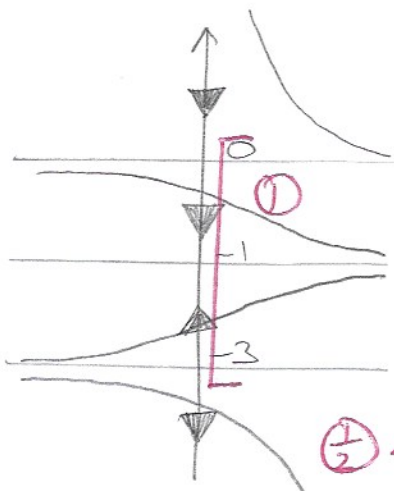
(*) NO NOT A SOLUTION

$$[3] \quad \frac{dP}{dt} = \boxed{-\frac{k}{\sqrt[3]{P}}} + k(P - P_0) \quad (*)$$

①

(-1/2) USED SAME CONSTANT

[4][a]



[b] 0 SEMI-STABLE, $(\frac{1}{2})$

-1 STABLE, $(\frac{1}{2})$

-3 UNSTABLE, $(\frac{1}{2})$

$(-\frac{1}{2})$ MISSING "y="

[c][i] -1

[ii] 0, $(\frac{1}{2})$

[5] $\frac{dy}{dx} = x + 2\sqrt{y}$

[a] $y'(-2) = -2 + 2\sqrt{4} = 2$ *

$y(1.5) \approx 4 + 2(0.5) = 5$

$y'(-1.5) \approx -1.5 + 2\sqrt{5} \approx 2.972$

$y(-1) \approx 5 + 2.972(0.5) = 6.486$

*

[b] $\begin{matrix} x & y \end{matrix}$

-1.75	4.5
-1.5	5.1232
-1.25	5.8799
-1	6.7798
-0.75	7.8317
-0.5	9.0435
-0.25	10.4221
0	11.9737

(1)

Course

MATH 2A

Student ID

11235813

Test

QUIZ 1

Question

2

3

4

5

Points

Total

Self Assessment [2 POINTS]

Based on your work on the prerequisites review packet and your performance on this quiz, what prerequisite skills should you improve on ?

DERIVATIVES OF TRIG FUNCTIONS, SHOWING MY WORK

CHAIN RULE, INTEGRATION BY PARTS,

L'HÔPITAL'S RULE + LIMITS

PARTIAL FRACTIONS DECOMPOSITION