

> #Hrudai Battini hb334 Attendance Quiz

> #1; Sir Ronald Ross was a British medical doctor who received the Nobel Prize for his discovery of the transmission of malaria in 1902.

#2: Hilda Hudson's middle name was Phoebe.

#3: Below

> astupid := proc(n) :

if n = 0 then

0 :

elif n = 1 then

1 :

elif n = 2 then

4 :

else

3 * astupid(n-1) - 3 * astupid(n-2) + astupid(n-3) :

fi:

end:

> seq(astupid(i), i = 100);

10000

(1)

> a1 := 0;

a2 := 8;

a3 := 5;

dsolve({ diff(y(t), t) = $\frac{a1 \cdot t^{a2}}{y(t)^{a3}}$, y(1) = a2 }, y(t));

a1 := 0

a2 := 8

a3 := 5

y(t) = 8

(2)

> a1 := 7;

a2 := 21;

a3 := 46;

dsolve({ a1 · D(D(y))(t) + a2 · D(y)(t) + a3 · y(t) = 0, y(0) = 1, D(y)(0) = 0 }, y(t))

a1 := 7

a2 := 21

a3 := 46

$$y(t) = \frac{3\sqrt{7} e^{-\frac{3t}{2}} \sin\left(\frac{11\sqrt{7}t}{14}\right)}{11} + e^{-\frac{3t}{2}} \cos\left(\frac{11\sqrt{7}t}{14}\right)$$

(3)

> with(LinearAlgebra) :

a1 := 50;

a2 := 46;

a3 := 18;

A := Matrix([[a1, a2, a3], [a2, a3, a1], [a3, a2, a1]);

```
evalf(Eigenvalues(A))[3];  
evalf(Eigenvectors(A)); #I am unsure how to only get the 2nd value eigenvector
```

```
a1 := 50
```

```
a2 := 46
```

```
a3 := 18
```

$$A := \begin{bmatrix} 50 & 46 & 18 \\ 46 & 18 & 50 \\ 18 & 46 & 50 \end{bmatrix}$$

```
32.
```

$$\begin{bmatrix} -28. \\ 114. \\ 32. \end{bmatrix}, \begin{bmatrix} 1. & 1. & -1.077702703 \\ -2.086956522 & 1. & 0.03040540541 \\ 1. & 1. & 1. \end{bmatrix}$$

(4)

```
> #  
=>
```