

1) Who was Sir Ronald Ross and what was his claim to fame?

According to Google, "Sir Ronald Ross KCB KCMG FRS FRCS was a British medical doctor who received the Nobel Prize for Physiology or Medicine in 1902 for his work on the transmission of malaria, becoming the first British Nobel laureate, and the first born outside Europe."

2) How long will the program take to run without including "option remember"

When computing the provided code without option remember, my computer took over 10 minutes or 600 seconds to finish executing the calculations at which point I stopped the program to prevent my computer from crashing. In comparison, the same calculation with option remember was solved instantly in less than 1 second.

3) What was Hilda Hudson's middle name?

Hilda Phoebe Hudson was the collaborator of Sir Ronald Ross.

4)

```
> # RUID 184004391, 8th digit = 9 = a1
> # age = 21 = a2
> # mother passed away, father = 63 years old = a3
>
> # 9 · y''(t) + 21 · y'(t) + 63 · y(t) = 0, y(0) = 1, y'(0) = 0
>
> dsolve({9·D(D(y))(t) + 21·D(y)(t) + 63·y(t) = 0, D(y)(0) = 0, y(0) = 1}, y(t));
```

$$y(t) = \frac{\sqrt{203} e^{-\frac{7t}{6}} \sin\left(\frac{\sqrt{203} t}{6}\right)}{29} + e^{-\frac{7t}{6}} \cos\left(\frac{\sqrt{203} t}{6}\right)$$

5)

```
> A := Matrix([[51, 63, 0], [63, 0, 51], [0, 63, 51]]);
```

$$A := \begin{bmatrix} 51 & 63 & 0 \\ 63 & 0 & 51 \\ 0 & 63 & 51 \end{bmatrix}$$

```
> evalf(Eigenvalues(A));
```

$$\begin{bmatrix} 51. \\ -63. \\ 114. \end{bmatrix}$$

```
> evalf(Eigenvectors(A)[2]);
```

$$\begin{bmatrix} 1. & 1. & -0.8095238095 \\ -1.809523810 & 1. & 0. \\ 1. & 1. & 1. \end{bmatrix}$$