Question 1

(a), (b)

Chart

Description automatically generated

The minimum applied current is 4nA (not inclusive)

Figure above has 4.04nA applied current.

(c). Set question\_number to 1, and compare to 0 to see the plot

Chart, line chart

Description automatically generated

(d).

Chart, line chart

Description automatically generated

Question 2.

(a), (b) The increase of sigma\_I would increase the standard deviation for noise. As sigma\_I increase, the graph would fluctuate more. The fluctuation would be more observable as sigma\_I increases. The shape of graph would change when the sigma\_I value is above 1e-3.

Chart, line chart

Description automatically generated

(c). The results are the same. Figures with smaller dt values overlap

You may check it out by following steps

1)Run the code, do not close the figure

2)Change dt value from 1e-4 to 1e-5, and run the code again

There might be small deviations due to the due to the noise, but it should generally overlap.