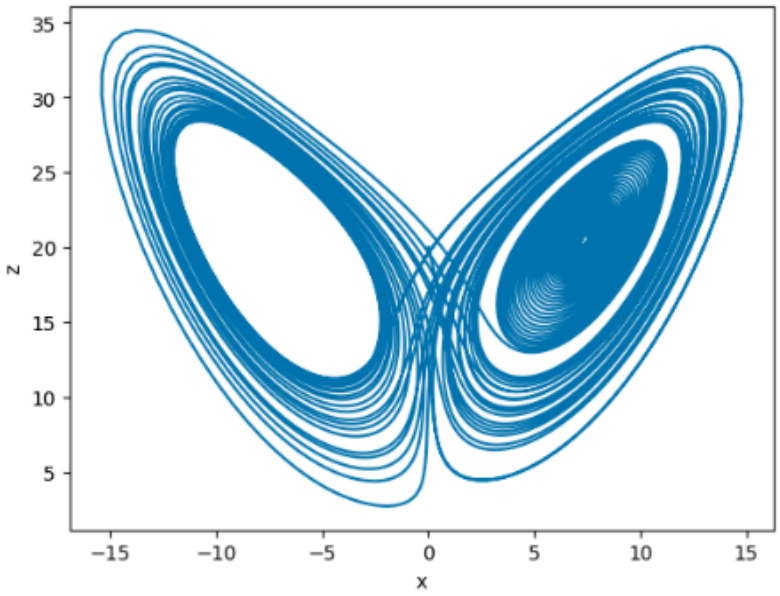
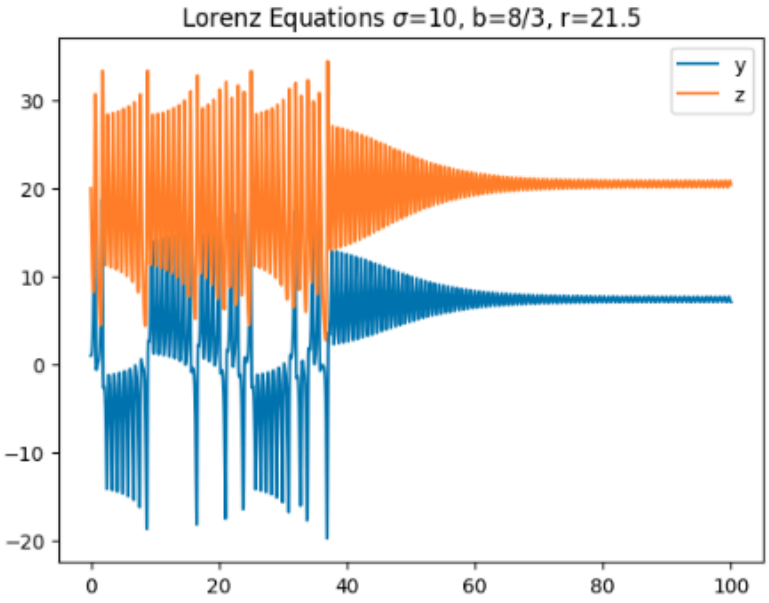
1a)

Describe this behaviour in words. Do you see any fixed points, limit cycles, or chaos?

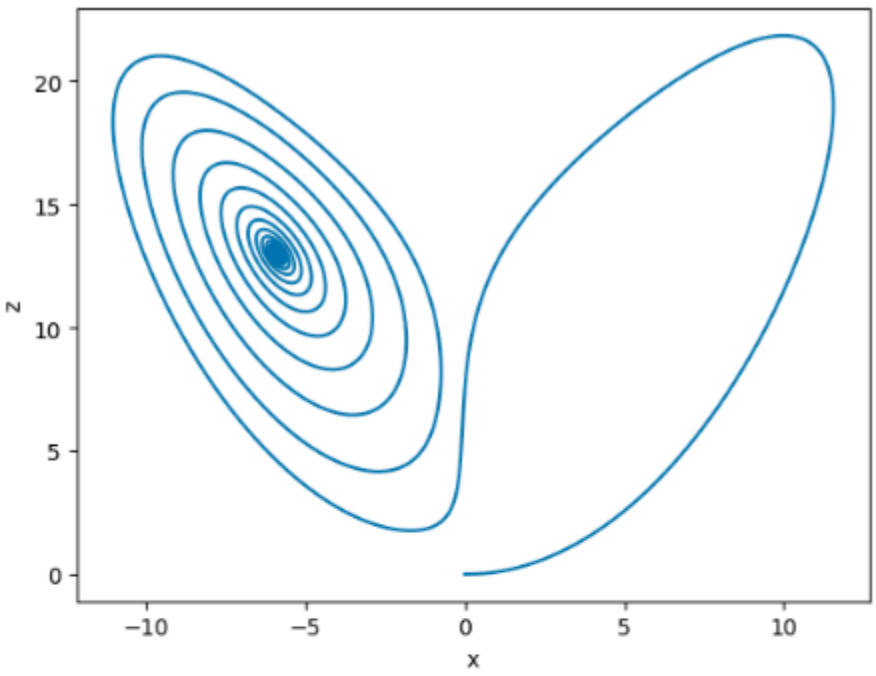
```
plt.title('Lorenz Equations $\sigma$=10, b=8/3, r=21.5')
```

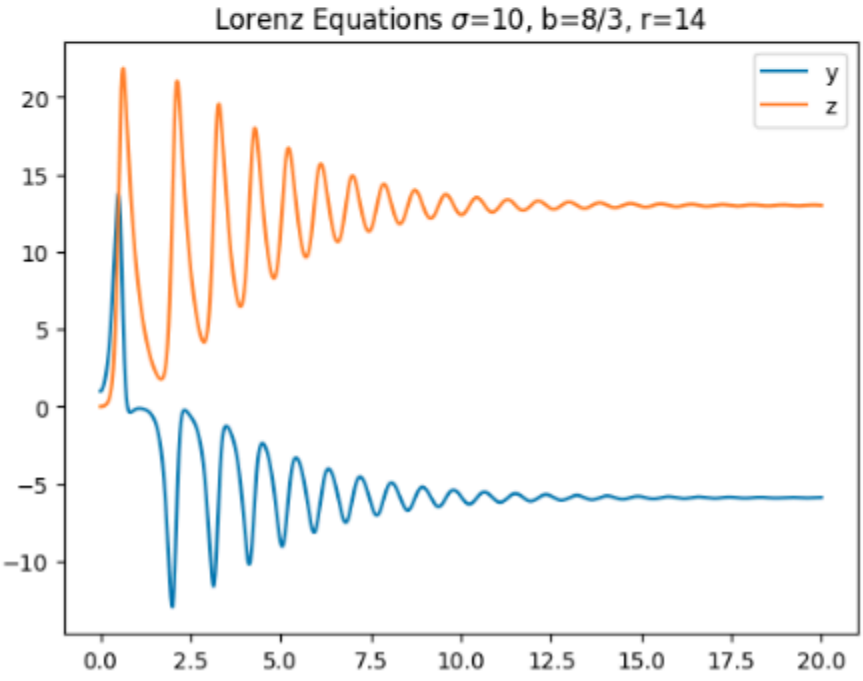




Although the trajectory looks like that of a Lorenz “butterfly,” it does not remain chaotic for r=21. It appears to converge to a fixed point on one “wing”. There is no sign of a limit cycle or of sustained chaos. The time series plot shows it settling to a fixed point too.

1b)
Describe this behaviour in words. Do you see any fixed points, limit cycles, or chaos?





Here the motion damps down straightforwardly. The spiral toward equilibrium is quite evident in both the phase portrait and the time series. The solution does not exhibit chaotic switching nor does it cycle indefinitely, it decays into one of the stable equilibria.