

Try graphing these for fun. Follow the settings carefully.

$$1. \begin{cases} x = \sin(3t) \\ y = \sin(4t) \end{cases}$$

$$0 \leq t \leq 6.3$$

$$tstep = 0.05$$

$$-1 \leq x \leq 1$$

$$-1 \leq y \leq 1$$

Radian mode

Zoom Square

$$2. \begin{cases} x = 8\cos t + 5\cos(4t) \\ y = 8\sin t - 5\sin(4t) \end{cases}$$

$$0 \leq t \leq 2\pi$$

$$tstep = 0.05$$

$$-15 \leq x \leq 15$$

$$-15 \leq y \leq 15$$

Radian mode

Zoom Square

$$3. \begin{cases} x = \sin(t + \sin t) \\ y = \cos(t + \cos t) \end{cases}$$

$$0 \leq t \leq 6.3$$

$$tstep = 0.05$$

$$-1.5 \leq x \leq 1.5$$

$$-1.5 \leq y \leq 1.5$$

Radian mode

Zoom Square

Axes Off

$$4. \begin{cases} x1 = t \\ y1 = \sqrt{1-t^2} + |t| \\ x2 = t \\ y2 = -\sqrt{1-t^2} + |t| \end{cases}$$

$$-1 \leq t \leq 1$$

$$tstep = 0.05$$

$$-1.2 \leq x \leq 1.2$$

$$-1 \leq y \leq 1.6$$

Zoom Square

Axes Off

Simultaneous mode

$$5. \begin{cases} x1 = \cos t \\ y1 = \sin t \\ x2 = t \\ y2 = \sin t \end{cases}$$

$$x2 = t$$

$$y2 = \sin t$$

$$0 \leq t \leq 2\pi$$

$$tstep = 0.05$$

$$-1.5 \leq x \leq 2\pi$$

$$-1.5 \leq y \leq 1.5$$

$$xscl = \pi/4$$

$$yscl = 1$$

Radian mode

Zoom Square

Simultaneous mode

$$6. \begin{cases} x = 2\cos t \\ y = 2\sin t \end{cases}$$

$$0 \leq t \leq 360$$

$$tstep = 5$$

$$-2 \leq x \leq 2$$

$$-2 \leq y \leq 2$$

Degree mode

Zoom Square

Repeat the graph with different  $tstep$  such as 30, 45, 90, and 120.