Lissajous figures

Questions

1. What is the resultant when both x-coodt and y-coodt oscillate with zero initial phase, same amplitude, frequency?
2. What is the resultant when both x-coodt and y-coodt oscillate with initial phase of $\pi/2$, same amplitude, frequency?
3. What is the resultant when both x-coodt and y-coodt oscillate with initial phase of π , same amplitude, frequency?
4. Under what conditions can the resultant be a circle?
5. Under what conditions can the resultant be an ellipse?
6. Can the resultant be a straight line?
7. Can the resultant be zero?

Note :

Questions given above may be visualized and solved using the simulations, obtaining a mathematical solution is to be always treated as the final answer. Such a mathematical solution implies that one is able to understand and apply the concept.