Desmos - Interference Model

1. Go to **Desmos** (www.desmos.com) and Launch Calculator. Sign in.

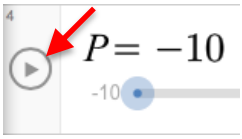
2. In an expression field on the left side of the Desmos window, type in the expression

   Asin(fx + P)

3. Use the + pull-down menu (left side of Desmos page) to add a second ***f(x)* expression** field. Enter the expression **Bsin(fx - P)** into the field.

4. Add sliders for **A**, **B**, **f** and **P**.

5. All sliders have ranges of values with a minimum, a maximum and a step. Click on the slider for the **P** variable. Set its minimum and maximum to -10 and +10. Click the ***Play*** button to the left of the slider to automatically scroll the value of **P** back and forth between its minimum and its maximum value and observe the graph window. Say *Groovy* (70s), *Cool* (80s), *Like Really Awesome* (90s), or *Rad*.



6. Add a third ***f(x)* expression** field and enter the expression: **Asin(fx + P) + Bsin(fx - P)**.

   NOTE: You have now added a third wave that is the sum of the first two waves. It is the resultant wave that would be produced in a medium as the result of the interference of the first two waves.

7. If you haven't done it yet, then go ahead and click the ***Play*** button to auto-scroll the **P** value between its minimum and its maximum.

8. Pause the auto-scrolling and *play with* the values of the other parameters in the expressions.

9. Save the file with a memorable name (e.g., *Interference*). We may use it again later.