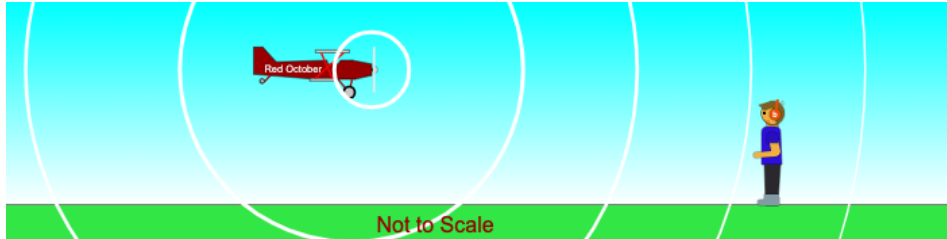


Speed from Doppler (Hard)

Step 1: Below is a picture of your plane moving towards you. Next to this picture give the temperature of the air, the frequency of the plane as it approaches you, and the frequency as it is moving away from you.



Step 2: Calculate the speed of sound at the fairgrounds based on the temperature you recorded above. Show your work

Step 3: Using the Doppler formula for a source of sound approaching you and the equation for when it is moving away from you, find the speed of the plane. Show all your work neatly below.

Step 4: Calculate the frequency you would hear if the plane was at rest but still producing the same sound as it was for the rest of this problem. Show your work below. Enter your answers into your program to check that you did everything properly.