

Hint for homework 1, problem 1

The following figure shows the basis for calculating the heart's electrical axis with trigonometry. The triangle represents the three limb leads. The circle is just for reference, and is similar to the unit circle that will be produced when you make the polar plot. The solid straight lines that pass through the center of the circle represent the zero voltages for lead I and lead II. The dashed lines and the arrows labeled V_I and V_{II} represent the measured voltages for leads I and II. The bold arrow coming out of the center of the circle represents the electrical vector of the heart. As you can see, V_H must have a larger magnitude than either V_I or V_{II} . I used trigonometry to figure out the rectangular coordinates of V_H , in terms of V_I and V_{II} , then converted to polar to make the polar plot. I will leave the trig up to you. Enjoy!

