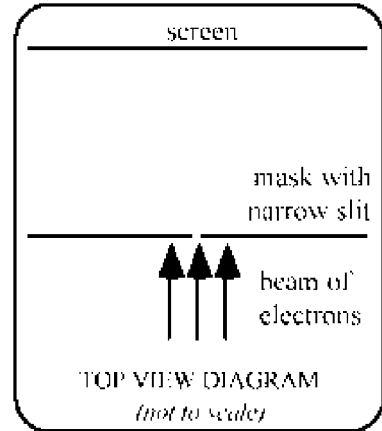


6. Consider the situation shown in the figure to the right. A beam of mono-energetic electrons is incident on a mask containing a single narrow slit.



I. For each change below, would that change cause the minima to move closer together, move further apart, or stay at the same location?

- a. The slit width is halved. The minima are *closer together* | *further apart* | *stay at same location* (circle one)  
Explain your reasoning.



- b. The kinetic energy of the electrons is halved. The minima are *closer together* | *further apart* | *stay at same location* (circle one) Explain your reasoning.

II. Suppose that the electrons were replaced with particles of greater mass such that the resultant pattern was **exactly the same** as that in the original experiment. In this case, would the kinetic energy of the new particles be *greater than* | *less than* | *equal to* (circle one) that of the original electrons? Explain your reasoning.