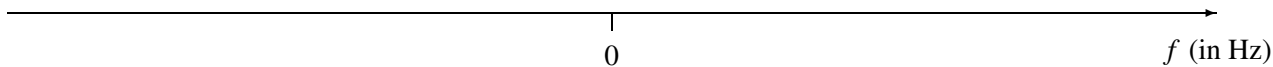


## PROBLEM:

In the strobe demo, remember that we observed that different flashing rates cause the spot on the disk to appear to stand still or to rotate slowly in either the clockwise or counter-clockwise direction.

- (a) Assume that the disk actually is rotating in the clockwise direction at a constant speed of 60 rps (revolutions per sec). Give a mathematical representation of the motion of the spot in terms of a rotating complex phasor.
- (b) Plot the spectrum of the signal determined in part (b).



- (c) What is the *largest* flashing rate  $f_s$  such that the wheel appears to stand still?
- (d) What should the flashing rate be in order that the wheel appear to move in the counter-clockwise direction at a speed of 1 revolution per second?