PROBLEM:

In the rotating disk and strobe demo, we observed that different flashing rates of the strobe light would make the spot on the disk stand still or move in different directions. For the following, assume that the disk is rotating CLOCKWISE at a constant speed of 10 revolutions per second.

(a) If the flashing rate is 9 times per second, express the movement of the spot on the disk as a complex phasor $p[n]$ versus the flash number n.

(b) Determine the speed (rotations per second) and direction of movement of the spot.

(c) Now let the flashing rate be variable. Determine all possible flashing rates so that the spot will move counter-clockwise at a rate of 3 rotations per second.