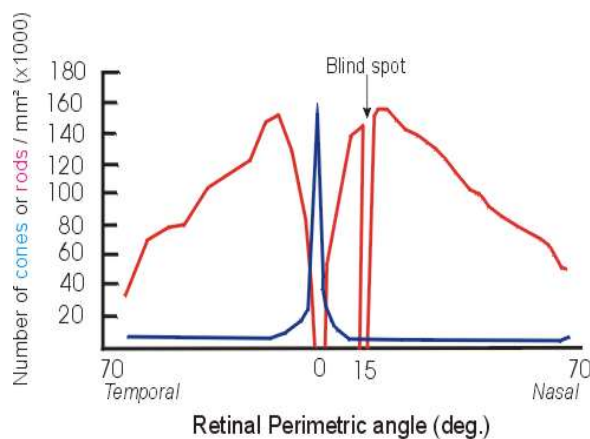


1. Two men in masks run out of a bank with a bag full of money. They jump into a car and make a getaway. You witness all of these events and fortunately have 20/20 vision. If the 20/20 E on a standard eye chart subtends 5 minutes of arc, how far away from the getaway car can you be in order to read the license plate and report it to the police?



2. Plot the positions of the Cardinal Points (F, F', P, P', N, N') and the positions of the entrance and exit pupils (E, E') for the Arizona Eye Model as a function of accommodative amplitude A. Use  $0 \text{ D} \leq A \leq 5 \text{ D}$ .

3. Osterberg measured the density of photoreceptors in the retina and provided the following plot. In the fovea, there are  $160,000 \text{ cones/mm}^2$ . Based on this result, what is the diameter of each cone? If the cones are hex-packed as shown in the figure below, what is the separation, d, between two rows of cones? What is the angular subtense of d relative to the rear nodal point of the eye?



Adapted after Østerberg, 1935

