EXAMPLE PROBLEMS:

1. A micrographic investigation has been carried out by using a light microscope with different incident light each having different wavelengths of λyellow=0.589 μm and λblue=0.436 μm. Estimate the followings by assuming, NA=1.4, the numerical aperture of objective, and k = 0.6:
2. The minimum power of resolution for each colour,
3. What is the minimum magnification of microscope to be for a person to distinguish two points sererately at the minimum resolution found in (a). Power of resolution of a person resolution from a distance of 250 mm is assumed to be 0,3 mm.

**Answer**

**1.a.**

**1.b.**

1. Answer the followings:
   1. Estimate the numerical aperture of a microscope with a depth of resolution, , for the light with λgreen=589 Ao.
   2. What is the smallest distance between two points to be for a person to discerned the points separately at a magnification of X1500.

(Resolution of a person from a distance of 250 mm is assumed to be 0,25 mm)

Answer 2.



By making a conversion and rearranging the equation

0,1153.x2=1-x 0,1153.x2+x-1=0 when this equation is resolved

x1=0,905andx2=-9,579

NA=0,95

1. 250 µm = 1500.d