# 17 - Exercises

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* Calculate linear magnification of a lens, if you know that object height is 2mm and image height is 1m.

A microscope objective has focal distance $\mathbf{f_1=1cm}$ and eyepiece $\mathbf{f_2=2cm}$, optical interval of the microscope is **d=4cm.** Object height is **y=50mm** and object distance is **a=15mm** in front of the objective. Calculate the image position, height and linear magnification of the microscope.

A microscope objective has focal distance $\mathbf{f_1=4mm}$, optical interval of the microscope is **d=6cm.** Final image height is **y=50mm** and distance is **a=15mm** in front of the eyepiece. Calculate the object position, height and focal distance of the eyepiece if the linear magnification of the microscope is 100.

Which lenses needs an human eye if the near point is 10cm.

Which glasses needs a hyperopic eye if the near point is 100cm.

Which glasses needs a myopic eye if the far point is 100cm.

The Human retina is sensitive to a yellow light with power
**P = 1,7.10$^{-18}$ W**. How many photons of the yellow light fall on retina per second.

The Human retina needs for a stimulation by the red light minimum power **P = 2,5.10$^{-17}$ W**. How many photons of the red light must fall on retina per second.

150 photons per second do a stimulation of a human retina, with power **P = 5.10$^{-16}$ W**. Calculate wavelength of the light.

# Interference of light

# Diffraction of light

# Polarised light

accommodation.

* Emetropia x ametropia

* Correction of ametropias

# Retina - structure

# Receptors and pigments