4.   (a)   The distance between the objective lens and the eyepiece of an astronomical telescope in its normal adjustment, i.e., the final image is formed at infinity, is 105 cm. When the eyepiece is moved 1.0 cm towards the objective lens, a final virtual image is formed at a point 20 cm from the eyepiece. Calculate the focal lengths of the objective lens and of the eyepiece.

[3 marks]