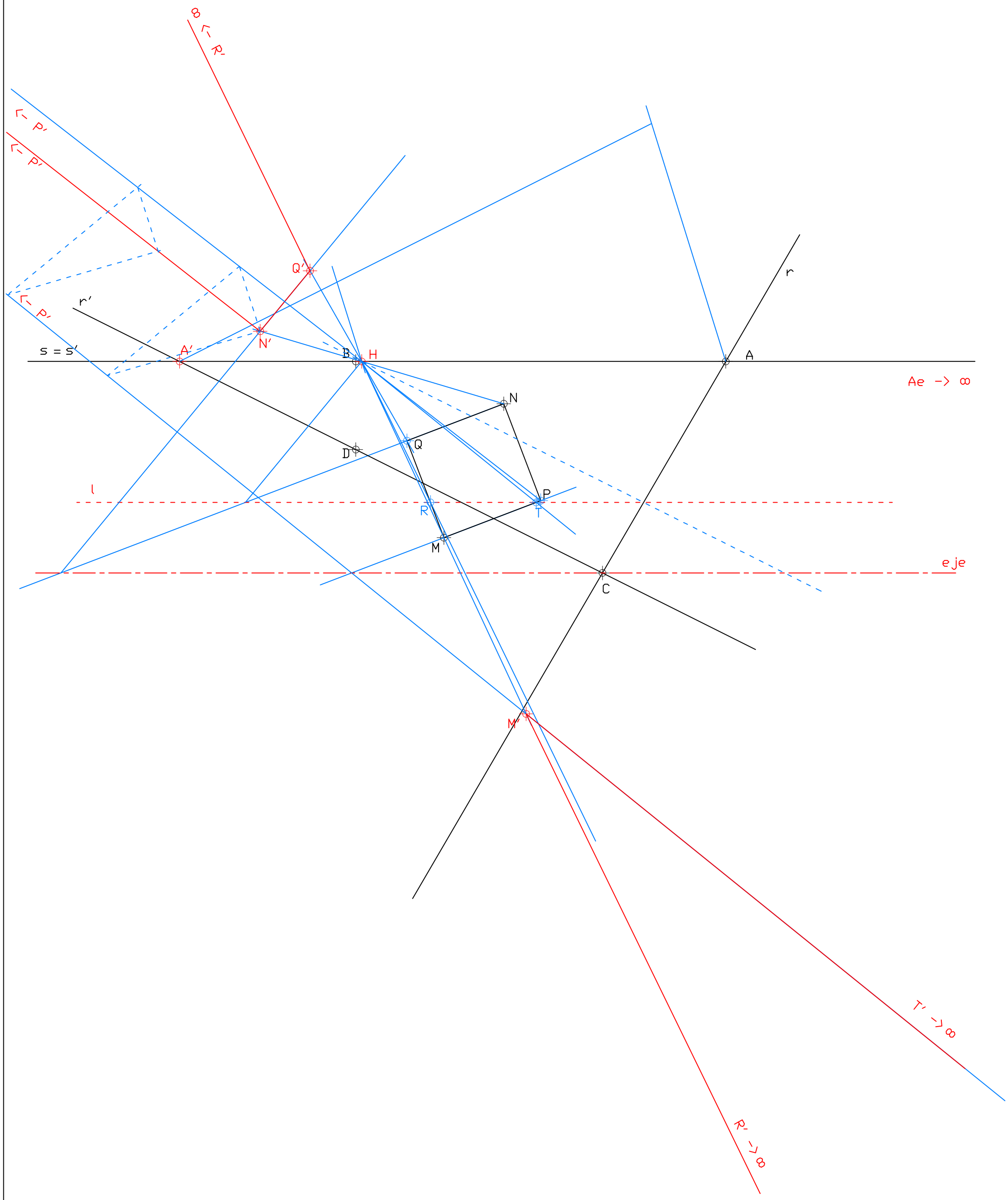
$(A\ A'\ H\ Ae) = (A'\ A\ Ae\ h) = -2$

$$\frac{A'Ae/A'H}{AAe/AH} = \frac{A'Ae * AH}{AAe * A'H} = AH/A'H = -2$$