Eyeglasses

a) $\phi = \phi_g + \phi_e - t\phi_e\phi_g$

$t = f_e = 1/\phi_e$

$$\boxed{\phi = \phi_e}$$

Eyeglasses do not change the system power

b) $\delta' = d'/n' = -\frac{\phi_1}{\phi}\tau$ $\quad n' = n_e \quad \phi_1 = \phi_g \quad \tau = t = f_e$

$$\boxed{d' = -n_e \phi_g/\phi_e^2}$$

Eyeglasses shift the rear principal plane of the system. Since the power remains constant (f_e), the rear focal point moves with P', and can be placed on the retina. There is no magnification change.

c) If $t \neq f_e$, the $\phi \neq \phi_e$ and the focal length of the eye changes. A magnification change of the image on the retina results.

d) Myopic requires $d' > 0 \Rightarrow \phi_g < 0$ (neg)

Hyperopia requires $d' < 0 \Rightarrow \phi_g > 0$ (pos)

e) Contact lenses sit in contact with the cornea, and effectively serve to change the corneal curvature (we can consider an approximate index match). The power and focal length of the eye system is therefore changed to put the focus of the system on the retina.