3.1

$f(z) = y - \frac{1}{z}$

$f'(z) = \frac{1}{z^2}$

$z_{k+1} = z_k - \frac{f(z_k)}{f'(z_k)} = z_k - \frac{(y - \frac{1}{z})}{(\frac{1}{z^2})} = z_k - (y - \frac{1}{z}) \cdot (z^2) = z_k - (z_k^2 y - z_k) = 2z_k - z_k^2 y = z_k (2 - z_k y)$

Svar: $z_{k+1} = z_k (2 - y z_k)$