

How does it look here for  $\lambda < 0$ ?

$y(t)$  decreases

$y_j$  ? decreases (does not depend on the step size  $h$ !)

Def.: A one-step method applied to the DTE can be written as

$$y_{j+1} = g(z) y_j$$

where  $z = h\lambda$  and  $g(z)$  is called the stability function (SF) of the method

Ex.: (13) EE :  $g(z) = 1 + z$

IE :  $g(z) = 1 / (1 - z)$

(14) EM :  $g(z) = 1 + z + \frac{z^2}{2}$