

- 1 Calculate, the degree exponent of the directed Barabási-Albert model with accelerated growth, assuming that the degree of the newly arriving nodes increases in time as  $m(t) = t^\theta$ .

$k_{in}$  is proportional to  $t^\theta$  so  $t$  is proportional to  $k_{in}^{1/\theta}$

$$P(k)dk \sim \frac{dt}{dk} dk$$

$$P(k)dk \sim k^{\frac{1}{\theta}-1} dk$$

$$-\gamma = \frac{1}{\theta} - 1$$

$$\gamma = -\frac{1}{\theta} + 1$$