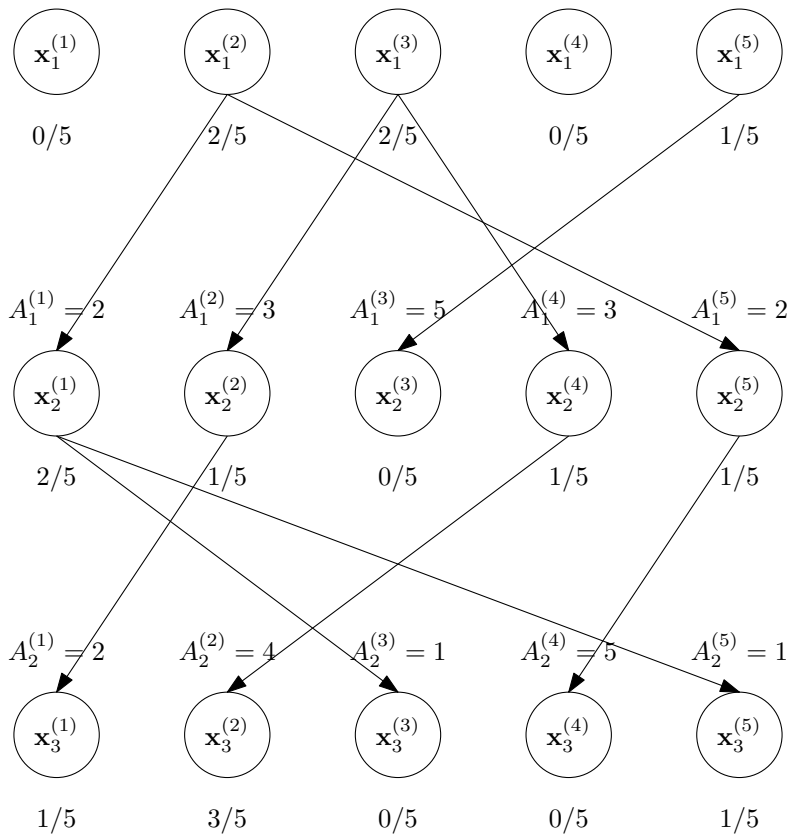


# Particle filter

$t = 3$

Normalise weights

$$W_3^{(k)} = \frac{w_3^{(k)}}{\sum_{k'} w_3^{(k')}} = \frac{w_3^{(k)}}{5}$$



Can resample from

$$\hat{p}(\mathrm{d}\mathbf{x}_{1:3} \mid \mathbf{y}_{1:3}, \theta) = \sum_k W_3^{(k)} \delta_{\mathbf{x}_{1:3}^{(k)}}(\mathbf{x}_{1:3})$$

to estimate

$$p(\mathbf{x}_{1:3} \mid \mathbf{y}_{1:3}, \theta)$$