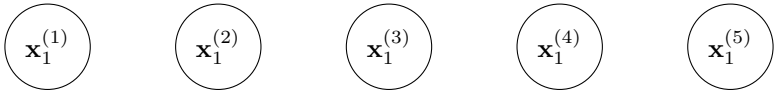
Particle filter

$t = 2$

Sample parents' indices of 2nd generation

$$A_1^{(k)} \sim \text{Cat}(W_1^{(1)}, \ldots, W_1^{(5)})$$



0/5 2/5 2/5 0/5 1/5

$A_1^{(1)} = 2$ $A_1^{(2)} = 3$ $A_1^{(3)} = 5$ $A_1^{(4)} = 3$ $A_1^{(5)} = 2$