

Recitation 12 Answers

1. (a) $\pi_0 = \frac{15}{23}$, $\pi_1 = \frac{5}{23}$, $\pi_2 = \frac{3}{23}$

(b) i. $\mathbf{P}(B_{ft}) = \frac{9}{46}$

ii. $\mathbf{P}(D_{ft}) = \frac{9}{46}$

iii. $\mathbf{P}(B_{fc}) = \frac{50}{69}$

iv. $\mathbf{P}(D_{fc}) = \frac{19}{69}$

(c) i. $\mathbf{P}(A) = \frac{1}{2}$

ii. $\mathbf{P}(B) = \frac{1}{2}$

2. (a) $N = 200,000$.

(b) $N = 100,000$.

3. Practice Problem:

(a) Y_n converges to 2 in probability.

(b) T_n does not converge in probability to any constant.

(c) A_n converges to $\mathbf{E}[X_n] = 0$ (by the WLLN).