8.20. If X is bounded in $L^1(\mathrm{P})$ then $\mathrm{E}[X_n^+] \leq \mathrm{E}[X_n^+] + \mathrm{E}[X_n^-] = \|X_n\|_1$ is bounded. For the converse note that $\mathrm{E}[X_n^-] = \mathrm{E}[X_n^+] - \mathrm{E}[X_n] = \mathrm{E}[X_n^+] - \mathrm{E}[X_1]$ by the martingale property. This proves that $\|X_n\|_1 = 2\mathrm{E}[X_n^+] - \mathrm{E}[X_1]$ is bounded also.