

Solutions, answers, and hints for selected problems

Complete solutions of some problems are given. Answers only are given for some other problems. For still others, only hints or partial solutions are given. Asterisks in “A Modern Approach to Probability Theory” by Fristedt and Gray identify the problems that are treated in this supplement.

For Chapter 17

17-3. slowly varying if $c < 1$; regularly varying of index 1 if $c = 1$; not regularly varying if $c > 1$

17-9. *Hint:* Find a bound for

$$\int_{(2^k, 2^{k+1}] \cup [-2^{k+1}, -2^k)} |s|^\beta R(ds).$$

17-15. 1

17-17. $\frac{1}{2} + \frac{1}{\pi\alpha} \arctan(\gamma \tan \frac{\pi\alpha}{2})$ in case $\alpha \in (0, 1) \cup (1, 2]$; $\frac{1}{2} + \frac{1}{\pi} \arctan \frac{\xi}{k}$ with $\frac{\xi}{0} = \infty$ or $-\infty$ according as $\xi > 0$ or $\xi < 0$ in case $\alpha = 1$; maximum value is $1 \wedge \frac{1}{\alpha}$.

17-29. in no domain of attraction

17-31. characteristic exponent of limiting distribution is $u \rightsquigarrow k_{4/3} |u|^{4/3}$;

$$a_n \sim 3^{3/4} e^{27/128} n^{3/4} e^{-(3/4)^{3/2} \sqrt{\log n}}$$

and $c_n = 0$.

17-38. in domain of attraction of stable distribution with $\alpha = 1$ and $\gamma = 1$; in domain of strict attraction of δ_1