

Unless otherwise indicated, problem citations are from Problems for Chapter 5, pp..

1. Suppose the continuous r.v.  $X$  has d.f.  $F$  given by  $F(x) = 0$  if  $x < 1$ ,  $F(x) = 1$  if  $x > 2$ , and  $F(x) = c \log x$  if  $1 \leq x \leq 2$ .

Find  $c$ , and the p.d.f.  $f$  of  $X$ . Be sure to specify all three pieces of  $f$ . Finally, sketch the graphs of  $f$  and  $F$ .

2. Do a and c of problem 4 on p.247, but with the 20 in (a) replaced by 25 and the 15 in (c) replaced by 25. Make sure you can do part b.

3. Problem 17. Let  $Y$  be the number of points scored on one shot.

4. Problem 18.

5. Problem 21.

6. Problem 25. This problem asks for the normal approximation. You should compare the normal approximation with the Poisson approximation and with the exact probability. But you don't need to hand these in.

7. Problem 32, but take  $\lambda = 1/6$ .

8. Problem 36. Also, find the d.f. and p.d.f. of the lifetime  $X$ . And: How does  $P(X > t + s | X > t)$  compare with  $P(X > s)$ ?