

1. Pg. 108: 2.7:  $c = 1/9$ .  
 2.11:(a)  $F(x) = x^4$ , (b)  $1/16$ , (c)  $5/27$
2. Pg. 113: 3.3:  $\frac{1}{n}x^{1/n-1}$   
 3.4:  $1/2x^{-1/2}, x \leq 1$
3. Pg. 159: 1.17: For  $a \neq 1, = \begin{cases} \infty & a < 1 \\ 1 & a > 1 \\ a-1 & a > 1 \end{cases}$   
 For  $a = 1 \infty$ .  
 1.18:  $E(N) = e$ .  
 1.20:  $\Pr(\min(X_1, \dots, X_n) > x) = (1 - F(x))^n$  and  
 $\Pr(\max(X_1, \dots, X_n) \leq x) = (F(x))^n$ . Now apply 1.19.  
 1.21: Using 1.20, (a)  $E(Y) = 1/(n + 1)$ .  
 (b)  $E(Z) = \frac{n}{n + 1}$ .
4. Pg. 166: 2.11:  $E(X^3) = 8/5$ .  
 2.12: Use integration by parts and induction.