

## Chapter 3

1. a -The number of heads in 10 flips of a fair (balanced) coin.  
-The number of patients arriving at a medical clinic before the first occurrence of a particular medical disorder.
- b -Blood cholesterol level, in mg/dl  
-Systolic blood pressure, in mmHg.
2. Nominal - Ethnic origin (black, Hispanic, white)  
Ordinal - Severity of disease (none, moderate, severe)  
Interval - Temperature in degrees Celsius  
Ratio - Concentration of a drug in a subject's urine.
3. a  $P(Z \geq -1) = 1 - P(Z \leq -1) = 1 - 0.1587 = 0.8413$   
b  $P(Z \leq -0.842) = 0.20$
4. a  $P(\chi_7^2 \geq 18.475) = 0.01$   
b  $P(\chi_{12}^2 \leq 14) = 0.699$
5. a  $P(T_{13} \leq -1.35) = 0.10$   
b  $P(T_{28} \geq 2.05) = 2 P(T_{28} \geq 2.05) = 2 [1 - P(T_{28} \leq 2.05)] = 0.05$
6. a  $P(F_{6, 24} \geq 2.51) = 0.05$   
b  $P(F_{5, 40} \geq 2.9) = 0.025$
7. All are zero.
8. Standard normal.