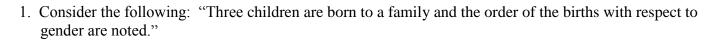
(Section 14.1 & 14.2)



- a) Write out the sample space for this "experiment" [One possible outcome is BBG (meaning the oldest child is a boy, the middle child is a boy, and the youngest child is a girl.)]
- b) Write out, using proper set notation, each of the following events.
  - i) A is the event of having more girls than boys.
  - ii) B is the event that exactly two children are boys.
  - iii) C is the event that all children are of the same gender.
  - iv) D is the event that the oldest child is a girl and the youngest child is a boy.
- c) Using the events defined in part b) and assuming births of boys and girls to be equally likely, determine each of the following probabilities. (In parts v and vi, first determine events  $A \cap D$  and B'.)

$$i)$$
  $P(A) =$ 

$$ii)$$
  $P(B) =$ 

*iii*) 
$$P(C) =$$

$$iv$$
)  $P(D) =$ 

$$V$$
)  $P(A \cap D) =$ 

$$vi)$$
  $P(B') =$ 

2. If a nickel, a dime, and a quarter are tossed, find the	e probability of obtaining
a) no heads	a)
b) at least one head	b)
c) exactly 2 heads	c)
3. Assume an urn contains 5 white chips and 10 black	c chips.
a) If you draw 1 chip randomly from the urn, dete	rmine the probability that the chip
i) is white	i)
ii) is not white	ii)
b) If 5 chips are drawn, all at one time (without re	placement), determine the probability that
i) exactly 2 are white and 3 are black	i)
ii) all 5 drawn chips are black	ii)
4. Suppose you roll a die and note the dots that show multiple of 3".	. Let A be the event "that the number of dots showing is a
i) Calculate the <b>odds against</b> event A.	i)
ii) Calculate $P(A)$	ii)
5. If the probability that you will win a door prize at a will not win a door prize?	a certain event is $\frac{3}{100}$ , what is the probability that you
<ol> <li>Assume you draw one card from a standard deck of event of drawing a "jack". Calculate each of the formula.</li> </ol>	of cards. Let H be the event of drawing a heart and J be the collowing probabilities.
a) $P(H) =$	a)
b) $P(J) =$	b)
c) $P(H \cap J) =$	c)
$d) P(H \cup J) =$	d)
e) Does $P(H \cup J) = P(H) + P(J)$ ? Why are wh	ny not?