

MAT 223 Homework #7 Key

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	Stalls	Circle	Balcony	Total
Adults	36	39	37	112
Children	41	21	31	93
Total	77	60	68	205

- b.  $\frac{112}{205}$
- c.  $\frac{68}{205}$
- d.  $\frac{37}{205}$
- e.  $\frac{37}{68}$

- f.  $\frac{37}{112}$
- g.  $\frac{112 + 68 - 37}{205} = \frac{143}{205}$
- h.  $\frac{112}{205} * \frac{68}{205} = .18122$   
 $\frac{37}{205} = .180487$

these are not exactly equal  
 so we say "no"

(this may be a sampling error  
 but we are not doing the test  
 to determine that in this case)

- 2. a.  $P(A) = \frac{104}{240} = \frac{13}{30}$
- b.  $P(A \cap B) = \frac{16}{240} = \frac{1}{15}$
- e.  $P(B) = \frac{60}{240} = \frac{1}{4}$
- f.  $P(A \cup B) = \frac{148}{240} = \frac{37}{60}$

- c.  $P(A|B) = \frac{16}{60} = \frac{4}{15}$
- d.  $P(B') = \frac{180}{240} = \frac{3}{4}$
- g.  $P(B|A) = \frac{16}{104} = \frac{2}{13}$
- h.  $P((A \cup B)') = 1 - \frac{37}{60} = \frac{23}{60}$

3. a.  $\frac{5}{12}$

b.  $\frac{3}{12} = \frac{1}{4}$

- c.  $\frac{1}{12} * \frac{1}{12} = \frac{1}{144}$
- d.  $\frac{2}{12} * \frac{2}{12} = \frac{1}{36}$

4. a. answers will vary (I have a 90% chance of passing this test.)  
 cannot be repeated

b. answers will vary (die roll, coin toss, etc)

c. answers will vary (probability of motorcycle crash per mile)  
 based on data collected