

1. (a) $S = \{(1, h), (1, t), (2, h), (2, t), (3, h), (3, t), (4, h), (4, t)\}$
 (b) Any two subsets of S that are disjoint.
2. Mutually exclusive means that $P(A \cap B) = \emptyset$ and independent means that $P(A \cap B) = P(A)P(B)$. Two non-empty events which are mutually exclusive can not be independent.
3. (a) $\frac{7}{80}$
 (b) $\frac{19}{80}$
 (c) $\frac{3}{40}$
 (d) $\frac{1}{17}$
 (e) $\frac{2}{80}$
4. Incorrect. Stock prices may go up, go down, or stay the same.
5. .3099
6. (a) $\frac{4}{17}$
 (b) $\frac{3}{16}$
 (c) .5735
7. (a) .0055
 (b) .000864
 (c) $E(x) = 1.2649$
8. .937
9. (a) .9722
 (b) .0278
10. (a) .05
 (b) .4130
 (c) .8167
11. (a) .216
 (b) .4615
 (c) 78%
12. (a) .2
 (b) .5
 (c) No
 (d) No
 (e) .3636
 (f) .7

13. (a) infinite discrete
 (b) continuous
 (c) finite discrete
14. (a) .2529
 (b) 1

Number of Customers	0	1	2	3	4	5
Probability	$\frac{1}{60}$	$\frac{4}{60}$	$\frac{2}{60}$	$\frac{7}{60}$	$\frac{14}{60}$	$\frac{8}{60}$

Number of Customers	6	7	8	9	10
Probability	$\frac{10}{60}$	$\frac{6}{60}$	$\frac{3}{60}$	$\frac{4}{60}$	$\frac{1}{60}$

15. (a) see class notes.
 (c) $\frac{41}{60}$
 (d) $\frac{55}{60}$
 (e) 4.95
 (f) MEAN = 4.95, MEDIAN = 5, MODE = 4
 VAR = 4.9809, ST. DEV = 2.2318

16. 4 to 47
17. $\frac{19}{22}$
18. 3000
19. distribution table for part a.

Sum	Net Winnings	Probability
7, 11	10	$\frac{8}{36}$
2, 3, 12	-10	$\frac{4}{36}$
other	-5	$\frac{24}{36}$

- (a) \$-2.22
 (b) \$6
20. (a) .64
 (b) .91
21. .0867