

Math 105: Partial Answers to Unit 4 Problem Set

1. (a) $\frac{1}{2}$ (b) $\frac{5}{16}$ (c) $\frac{1}{4}$ (d) $\frac{9}{16}$ (e) $\frac{1}{2}$ (f) 1:3
2. (b) i. 0.4375 ii. 0.0875 iii. 0.4375 iv. 0.2
3. (a)
4. (a) $S = \{\text{Red, Blue}\}$ (b) $\frac{3}{8}$ (c) $\frac{2}{7}$ (d) $\frac{5}{7}$ (e) $\frac{4}{7}$
5. (a) $\frac{1}{8}$ (b) $\frac{1}{4}$ (c) $\frac{1}{5}$ (d) $\frac{1}{6}$ (e) $\frac{1}{3}$
6. (a) i. 3:10 ii. 3:1 iii. 1:51 iv. 10:3
(b) i. Odds in favor of E are 3:2; Odds against E are 2:3
ii. Odds in favor of E are 1:3; Odds against E are 3:1
iii. Odds in favor of E are 5:1; Odds against E are 1:5
(c) i. $P(A) = \frac{9}{10}$ ii. $P(A) = \frac{2}{7}$ iii. $P(A) = \frac{1}{4}$
7. (a) $S = \{\text{HHH, HHT, HTH, THH, HTT, THT, TTH, TTT}\}$
(b) $S = \{0, 1, 2, 3\}$ (d) $\frac{3}{8}$ (e) $\frac{1}{2}$ (f) "no heads are tossed" (g) $\frac{3}{7}$ (h) $\frac{1}{2}$
8. (a) .35 (b) 0.60 (c) 0.60 (d) 0.77 (e) 0.18 (f) 0.3 (g) no (h) no
9. (a) 4 (b) 7 (c) 300 (d) 0.33 (e) no (f) about 150
10. (a) $S = \{\text{Brown, Yellow, Orange}\}$
11. (b) $A = \frac{5}{12}$; $B = \frac{1}{3}$; $C = \frac{1}{4}$; $D = \frac{11}{12}$ (c) Yes 0.1818... vs. .3333
(d) i. 1:5 ii. 11:1 iii. 1:1 iv. 7:2
12. (b) $S = \{1, 2, 3, 4, 6, 8, 9, 12, 16\}$ (c) no (d) $\frac{1}{8}$ (e) 25 (f) Yes
13. $\frac{4}{9}$
14. (a) 0.7 (b) 0.3 (c) complementary
15. (a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) $\frac{2}{3}$ (d) $\frac{1}{3}$
16. (b) \$900 (c) \$2
17. (a) \$1200 (b) \$3