Math 3003
Probability Basics Quiz/Study Guide **Solutions**

1. $^2/_3$ 2. $^1/_{13}$ 3. $^3/_4$

4. (a) $^1/_{1024}$ (b) False

5. (a) $^4/_{13}$ (b) $^8/_{13}$ (c) b

6. $^1/_{36}$ 7. $^7/_{24}$

8. (a) $^{125}/_{729}$ (b) $^5/_{42}$ 9. 362,880

10. (a) $^1/_4$ (b) $^1/_8$ (c) $^1/_{16}$

11. $^{21}/_{1292}$ 12. (a) $^5/_{12}$ (b) $^5/_{33}$ (c) $^{125}/_{1728}$

13. (a) $^1/_4$ (b) $^1/_2$ (c) Answers may vary. Using RandInt(1,4), we could let the selecting of an even number represent the spinner landing on red; 1could represent the spinner landing on yellow; and 3 could represent landing on blue.

14. (a) $^1/_3$ (b) $^2/_3$ (c) 1

15. 495 16. (a) $^1/_6$ (b) $^1/_{12}$ (c) $^1/_6$ (d) $^1/_2$

17. ½ 18. $^1/_8$

19. (a) $^1/_3$ (b) $^5/_{18}$ 20. 91%

21. 17,576,000 22. 33,649 23. 30 times

24. (a) $\frac{6!}{3!3!} = 20$ (b) $\frac{7!}{3!} = 840$

25. 23% 26. $^{23}/_{50}$ or 46%

27. (a) 6% (b) 94%

28. 720 ways 29. -$1.67/ticket

30. (a) Answers may vary. Using RantInt (0, 99999), which would produce random five-digit numerals. We could let odd digits be boys and even digits be girls. Then P(girl) = P (boy) = 1/2 which has been generally true. There are a lot of factors which could affect the likelihoods, though, so the actual problem is quite complex!

(b) Answers may vary. Theoretically, P(all 5 girls) = P(all 5 boys) = 1/32 ≈ 3%.

31. P(Tiger wins the tournament) = 1/41 ≈ 2%.

Do your best! Rise to the challenge! Live and learn!