

## C: ANSWERS TO SELECTED PROBLEMS

### Chapter 5.1, Central Tendency

- |  |                               |
|--|-------------------------------|
| 1. 8.                                      | 3. 6.                         |
| 5. 6.44, rounded to the nearest hundredth. | 7. [a] 92.71, [b] 91, [c] 91. |
| 9. 5'8".                                   | 11. \$33,305.56.              |
| 13. 2.46.                                  | 15. 18.46.                    |
| 17. \$0.                                   |                               |

### Chapter 5.2, Expected Value and Standard Deviation

- |         |                              |
|---------|------------------------------|
| 1. 1.2. | 3. $E[X] = 3.0, s^a 2.7568.$ |
| 5.      |                              |

$X$	$\Pr[X]$	Product
25	.2	5
10	.4	4
5	.2	1
1	.2	.2
		$E[X] = 10.2$

- |  |                                     |
|--|-------------------------------------|
| 7. 1.0565                                  | 9. 35 cents.                        |
| 11. $m = 25, s^a 4.33.$                    | 13. 3.25 flips.                     |
| 15. Expect 6 for R, complement of 4 for D. | 17. Expect to lose \$0.05 per game. |
| 19. $m = 1.5.$                             | 21. $m = 1.5, s^a 0.91.$            |

### Chapter 5.3, Normal Random Variable

- [a] 0.5000, [b] 0.8413, [c] 0.3413.
- [a]  $0.5000 - 0.0618^a 0.4382$ , [b]  $0.9987 - 0.9772^a 0.0215$ , [c]  $0.9525 - 0.0062^a 0.9463$ .
- [a]  $0.8413 - 0.5000^a 0.3413$ , [b] 0.1587, [c]  $1.0000 - 0.1587^a 0.8413$ .
- $0.9082 - 0.0643 \approx 0.8439$ .
- $1 - 0.0485 \approx 0.9515$ .

### Chapter 5.4, The Normal Approximation to a Binomial Random Variable

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|--|------------|
| 1. [a] Valid, [b] Not, [c] Not, [d] Valid. | 3. 0.9821. |
| 5. $1.0000 - 0.7764^a 0.2236$ .            | 7. 630.    |
| 9. $0.8159 - .1841^a 0.6318$ .             | 11. 90.7.  |
| 13. 6, ~17%.                               | 15. 0.     |

### Chapter 5.5, Chapter Review

#### Mastery Quiz

- [c], 2. [b], 3. [b], 4. [a], 5. [b], 6. [c], 7. [d], 8. [c], 9. [a], 10. [b]

#### Review

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|--|-------------------------|
| 1. [a] 28.33, [b] 25 and 32, [c] 30.   | 3. 33.33 cents.         |
| 5. 2.  |                         |
| 7. [a] {0,1,2}, [b] $\{\frac{20}{56}, \frac{30}{56}, \frac{6}{56}\}$ , [c] $\frac{42}{56}$ , [d] $\approx 0.634$ . |                         |
| 9. $a = 0, b = 0.3, c = 0.2, d = 5, e = 1, f = 0.1$ .  |                         |
| 11. \$0.50.  | 13. 51.                 |
| 15. [a] 40, [b] 6.197, [c] 0.063, [d] 0.0630.  | 17. 0.0082.             |
| 19. 0.0559.  | 21. Approximately 100%. |