

## ANSWERS TO PRACTICE EXERCISES 10-16

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### Practice Exercise 10

1. (i) {2, 4, 6} (iii) {3, 4, 5, 6} (v) {3, 6}

(ii) {1, 2} (iv) {2, 3, 5}

2.

|             |      |         |
|-------------|------|---------|
| Outcome     | Snow | No Snow |
| Probability | 0.55 | 0.45    |

3. (a) 0.262 (b) 0.738

4 Red =  $\frac{1}{3}$ ; Blue =  $\frac{1}{3}$ ; Yellow =  $\frac{1}{6}$ ; Green =  $\frac{1}{6}$

5 (a)  $\frac{1}{6}$  (b)  $\frac{1}{2}$  (c) 0

6. (a)  $\frac{1}{6}$  (b)  $\frac{1}{3}$  (c)  $\frac{1}{2}$  (d)  $\frac{11}{12}$  (e) 1

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### Practice Exercise 11

1. a) {Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday}

b) {Red, Red, Red, White, White, Blue}

c) {2, 4, 6, 8, 10, 12, 14, 16, 18, 20}

d) {Gold, Silver, Bronze}

e) {Jacks, Queens, Kings}

2. (a)  $\frac{1}{52}$  (b)  $\frac{8}{52}$  or  $\frac{2}{13}$  (c)

(d)  $\frac{1}{2}$  (e)  $\frac{1}{13}$  (f)  $\frac{4}{13}$

3. (a)  $\frac{3}{10}$  (b) (c)

(d) 1 (e)  $\frac{1}{10}$  (f) 0

4. (a)  $\frac{1}{52}$  (b)  $\frac{1}{2}$  (c)  $\frac{1}{7}$  (d)  $\frac{1}{2}$

(e)  $\frac{1}{n}$ , where n is the number of students in your class

5.  $\frac{6}{36}$  or  $\frac{1}{6}$

**Practice Exercise 12**

1. (a) {1, 5, 6}  
 (b) {1, 2, 4, 5}  
 (c) {1, 4, 6}  
 (d) {1, 2}  
 (e) {4, 5, 6}
  2.  $\frac{3}{8}$                       3.  $\frac{7}{8}$                       4.  $\frac{12}{13}$                       5. 0.25
  6.  $\frac{43}{50}$                       7.  $\frac{3}{5}$                       8.  $\frac{9}{10}$
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**Practice Exercise 13**

1. (a) Mutually Exclusive                      (b) Non-mutually Exclusive  
 (c) Mutually Exclusive                      (d) Non-mutually Exclusive
  2. (a) No                      (b) No                      (c) Yes                      (d) Yes
  3. (a)  $\frac{1}{3}$  (b) 1                      (c)  $\frac{1}{2}$                       (d)  $\frac{1}{3}$                       (e)                      (f)  $\frac{1}{2}$   
 (g)  $\frac{2}{3}$
  4. (a)  $\frac{1}{2}$                       (b) 1                      (c)  $\frac{1}{2}$                       (d)  $\frac{4}{13}$                       (e)  $\frac{5}{13}$
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**Practice Exercise 14**

1.  $\frac{1}{256}$
  2. (a)  $\frac{1}{49}$                       (b)  $\frac{2}{21}$
  3.  $\frac{2}{7}$                       4. 18%                      5.  $\frac{1}{221}$
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**Practice Exercise 15**

1. (i)  $A = \{(3, 1), (2, 2), (1, 3)\}$   
 (ii)  $B = \{(6, 5), (5, 6)\}$   
 (iii)  $C = \{(1, 1), (2, 2), (3, 3), (4, 4), (5, 5), (6, 6)\}$   
 (iv)  $D = \{(6, 4), (5, 5), (4, 6), (6, 5), (5, 6), (6, 6)\}$   
 (v)  $E = \{(6, 4), (5, 5), (4, 6), (6, 5), (5, 6), (6, 6)\}$

- (vi)  $F = \{(1,1), (2, 1), (1, 2), (1, 3), (2, 2), (3, 1), (3,2), (2, 3), (1, 4), (4, 1)\}$
2. (i)  $\{(3, 1), (2, 2), (1, 3), (6, 5), (5, 6)\}$   
 (ii)  $\{(1, 1), (2, 2), (3, 3), (4, 4), (5, 5), (6, 6), (6, 4), (4, 6), (6, 5), (5, 6)\}$   
 (iii)  $\{(3, 1), (2, 2), (1, 3), (1,1), (2, 1), (1, 2), (3,2), (2, 3), (1, 4), (4, 1)\}$   
 (iv)  $\phi$   
 (v)  $\{(2, 2)\}$   
 (vi)  $\{(4, 6), (5, 5), (6, 5), (5,6), (6, 6)\}$
3. (i)  $\frac{5}{36}$       (ii)  $\frac{10}{36}$  or  $\frac{5}{18}$       (iii)  $\frac{10}{36}$  or  $\frac{5}{18}$   
 (iv) 0      (v)  $\frac{1}{36}$       (vi)  $\frac{3}{36}$  or  $\frac{1}{12}$
4. (i)  $\frac{1}{2}$       (ii)  $\frac{7}{10}$
5. (i)  $\frac{4}{9}$       (ii)  $\frac{2}{9}$
6. (i)  $\frac{1}{3}$       (ii)  $\frac{1}{3}$

### Practice Exercise 16

1. (i)      (ii)  $\frac{1}{3}$       (iii)      (iv)
2. (i)  $\frac{1}{3}$       (ii)      (iii)  $\frac{4}{15}$
3. (i) 0.24      (ii) 0.16      (iii) 0.36      (iv) 0.24
4. (i)  $\frac{9}{25}$       (ii)  $\frac{27}{125}$       (iii)  $\frac{4}{25}$
5. (i)      (ii)      (iii)

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| <b>END OF TOPIC 3</b> |
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