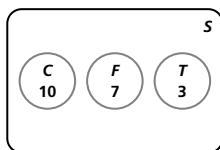


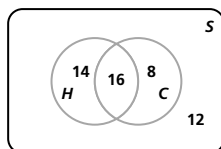
4. (a) $\frac{1}{27}$ (b) $\frac{1}{54}$ (c) $\frac{2}{27}$
 (d) $\frac{1}{2}$ (e) $\frac{2}{3}$ (f) $\frac{1}{18}$
5. (a) $\frac{1}{2}$ (b) $\frac{1}{6}$ (c) $\frac{1}{2}$ (d) $\frac{1}{26}$ (e) $\frac{10}{13}$
6. (a) $\frac{1}{2}$ (b) $\frac{1}{4}$ (c) $\frac{1}{4}$
7. (a) $\frac{1}{4}$ (b) $\frac{3}{4}$
8. (a) $\frac{1}{11}$ (b) $\frac{2}{11}$ (c) $\frac{4}{11}$
9. (a) $\frac{1}{5}$ (b) $\frac{1}{5}$
 (c) Odd; there are 38 odd and only 37 even numbers.
10. (a) $\frac{1}{8}$ (b) $\frac{7}{8}$ (c) $\frac{3}{8}$
11. $\frac{59}{360}$
12. (a) 36 (b) $\frac{1}{6}$ (c) $\frac{5}{6}$
13. $\frac{1}{10}$
14. 6
15. People do not choose randomly. The outside numbers are chosen less often and the higher number 3 is selected more often from the two numbers left.

4.3 Exercises, page 228

1. (a) {6, 9} (b) {2, 5, 6, 9, 10, 12}
 (c) {9, 10} (d) {2, 4, 6, 9, 10, 12}
 (e) $\emptyset$ (f) {9}
2. (a) 0; mutually exclusive
 (b) 0.75; not mutually exclusive
 (c) 0.6; mutually exclusive
3. (a) 0 (b) 0.5 (c) 0.5
4. $\frac{11}{12}$
5. $\frac{6}{7}$
6. (a)



- (b) (i) $\frac{1}{2}$ (ii) $\frac{3}{20}$ (iii) $\frac{13}{20}$
7. 0.8
8. (a)

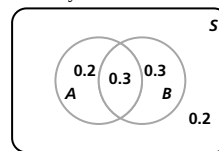


- (b) (i) $\frac{7}{25}$ (ii) $\frac{19}{25}$ (iii) $\frac{13}{25}$
9. $\frac{2}{13}$
10. $\frac{4}{13}$
11. $\frac{23}{36}$
12. 0.5
14. (a) $\frac{7}{45}$ (b) $\frac{8}{9}$ (c) $\frac{26}{45}$
15. $\frac{9}{52}$

4.4 Exercises, page 235

1. (a) $\frac{12}{19}$ (b) $\frac{3}{8}$
2. $\frac{2}{9}$

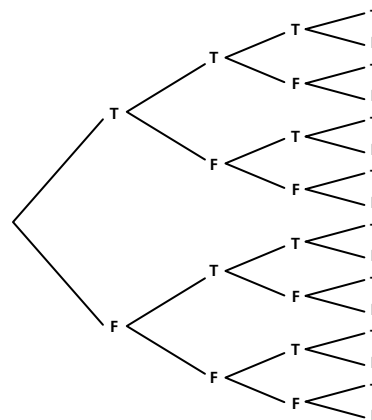
3. $\frac{1}{3}$
4. $\frac{1}{17}$
5. (a) $\frac{61}{250}$ (b) $\frac{11}{750}$
6. $\frac{3}{28}$
7. 0.48
8. (a) $\frac{29}{50}$ (b) $\frac{23}{50}$ (c) $\frac{1}{50}$ (d) $\frac{7}{50}$
9. (a) $\frac{4}{1431}$ (b) $\frac{2}{159}$ (c) $\frac{2}{477}$
 (d) $\frac{13}{53}$ (e) $\frac{16}{477}$ (f) $\frac{52}{477}$
10. (a) 1, 2; 1, 3; 1, 4; 2, 3; 2, 4; 3, 4
 (b) (i) $\frac{5}{6}$ (ii) $\frac{1}{6}$ (iii) $\frac{1}{6}$ (iv) $\frac{1}{3}$ (v) $\frac{2}{3}$
11. (a) $\frac{1}{2}$ (b) $\frac{3}{5}$
12. (a) Region C satisfies both A and B conditions, so events are not mutually exclusive.



- (b) You get the same answers for the probabilities, so the condition has no influence.
13. (a) 0.8 (b) 0.7 (c) 0.56 (d) 0.44
14. (a) 0.32 (b) 0.21
15. $\frac{1}{2}$
16. (a) 2% (b) 8%

4.5 Exercises, page 245

1. 24
2. (a)



- (b) $\frac{1}{16}$ (c) $\frac{1}{4}$
3. (a) 7D 7D (b) AS 7D
 (c) 2C2C, 2C3C, 2C4C, ..., 10C9C, 10C10C
 (d) AS2C, AS4C, AS6C, ..., AD8C, AD10C
4. (a) 36
 (b) 1 red, 1 white is the only outcome
 (c) 1 red, 2 white; 2 red, 1 white
 (d), (e) 2: (1, 1); $\frac{1}{36}$
 3: (1, 2), (2, 1); $\frac{1}{18}$
 4: (1, 3), (2, 2), (3, 1); $\frac{1}{12}$
 5: (1, 4), (2, 3), (3, 2), (4, 1); $\frac{1}{9}$