

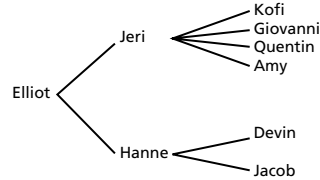
Chapter 6

6.1 Exercises, page 333

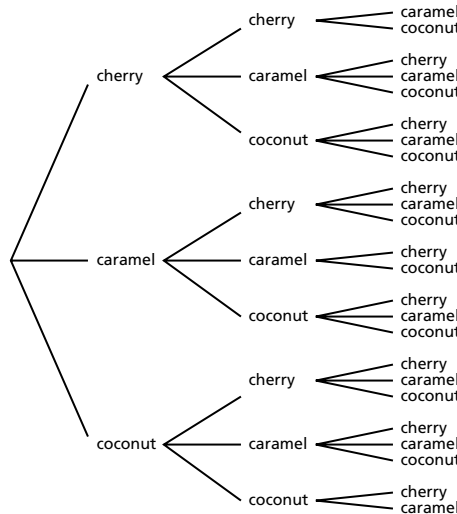
4. Diamond shapes represent decisions that are to be made.

6.2 Exercises, page 343

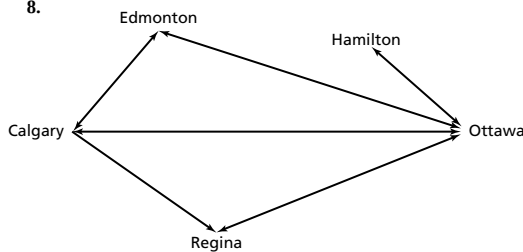
3. Cause-and-effect diagrams list all the possible causes of a single outcome. Tree diagrams begin at a single point and list all possible outcomes.
4. (a) tree diagram



- (b) directed graph
5.



- 8.



6.3 Exercises, page 353

1. (a) 0 (b) 8 (c) 7 (d) 3
(e) $A: 3 \times 3$, $B: 2 \times 4$
(f) row 1: 15, row 2: 13, row 3: 20
(g) column 1: 12, column 2: 30, column 3: 56, column 4: 90
2. (a) $\begin{bmatrix} 6 & 12 & 27 \\ 9 & 30 & 0 \\ 12 & 33 & 15 \end{bmatrix}$ (b) $\begin{bmatrix} 0.2 & 0.5 \\ 0.5 & 0.1 \end{bmatrix}$ (c) $\begin{bmatrix} 3 & 6 & 12 \\ 3 & 15 & -1 \\ 5 & 19 & 9 \end{bmatrix}$
(d) not possible (e) $\begin{bmatrix} 1 & 5 \\ 5 & 4 \end{bmatrix}$

$$(f) \begin{bmatrix} 2 & -3 & -14 & -9 \\ -6 & -16 & -43 & -77 \end{bmatrix} \quad (g) \begin{bmatrix} 5 & 10 \\ 10 & -1 \end{bmatrix}$$

$$(h) \begin{bmatrix} 22 & 5 & -42 & -9 \\ 6 & 20 & -19 & -61 \end{bmatrix}$$

3. Matrices A and B have different dimensions, and matrices A and C have the same dimensions.

4. (a) a_{11} (b) a_{21} (c) a_{23} (d) a_{22} (e) a_{32}
5. Games: 657, Goals: 270, Assists: 645, Points: 915, Penalties in Minutes: 953

212.0	212.9
66.0	66.0
425.6	429.7
333.8	336.6
3497.1	3501.7
5958.6	5955.7
558.7	562.9
468.9	468.0
1638.9	1641.3
1934.1	1920.6

6. (a) (b) 5958.6 for Ontario

- (c) e_{92}
7. (a) 16 590
(b) 1986: 19 654 320, 1991: 21 304 745, 1996: 22 628 910
(c) 1991: \$79 288 750 000, 1996: \$98 973 000 000,
Total: \$178 261 750 000

Sport	Total (1000s)	% Males	% Females
Golf	1801	11.1	3.9
Hockey (ice)	1500	12.0	0.5
Baseball	1339	8.0	3.1
Swimming	1120	3.6	5.6
Basketball	787	4.6	1.9
Volleyball	744	3.3	2.8
Soccer	739	4.6	1.5
Tennis	658	3.6	1.8
Skiing, downhill/alpine	657	2.9	2.6
Cycling	608	3.0	2.0
Skiing, cross-country/nordic	512	1.7	2.5
Weightlifting	434	2.5	1.1
Badminton	403	1.7	1.7
Football	387	2.9	0.3
Curling	312	1.5	1.1
Bowling, 10 pin	282	1.1	1.2
Softball	210	1.0	0.7
Bowling, 5 pin	200	0.7	1.0

- (ii) 8 328 000
(iii) 4 365 000
9. (a) 1998 (b) 2000
(c) Scotch Pine: 576, Douglas Fir: 207, Blue Spruce: 303

39	25	33
32	28	28
28	16	15
16	25	17
14	17	26
13	14	11
13	8	13
12	9	4
11	11	7
11	10	7

10. (a) (b) United States