1.20 (a) A stem-and-leaf plot is shown next.

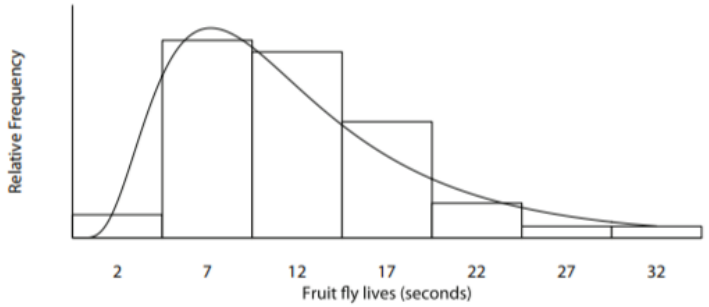
Stem	Leaf	Frequency
0*	34	2
0	56667777777889999	17
1*	0000001223333344	16
1	5566788899	10
2*	034	3
2	7	1
3*	2	1

(b) The relative frequency distribution table is shown next.

Relative Frequency Distribution of Fruit Fly Lives

Class Interval	Class Midpoint	Frequency, f	Relative Frequency
$0-4$	2	2	0.04
$5-9$	7	17	0.34
$10-14$	12	16	0.32
$15-19$	17	10	0.20
$20-24$	22	3	0.06
$25-29$	27	1	0.02
$30-34$	32	1	0.02

(c) A histogram plot is shown next.



(d) $\tilde{X} = 10.50$.

2.8 (a) $A = \{(3,6),(4,5),(4,6),(5,4),(5,5),(5,6),(6,3),(6,4),(6,5),(6,6)\}$.

(b) $B = \{(1,2),(2,2),(3,2),(4,2),(5,2),(6,2),(2,1),(2,3),(2,4),$
$(2,5),(2,6)\}$.

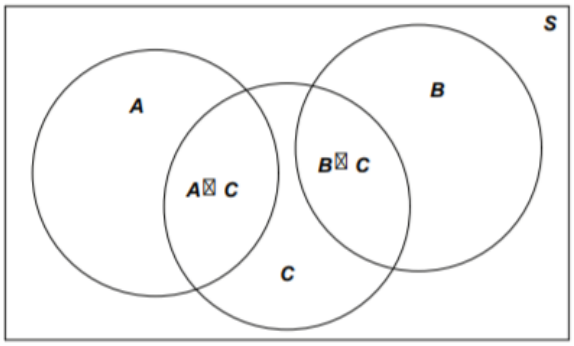
(c) $C = \{(5,1),(5,2),(5,3),(5,4),(5,5),(5,6),(6,1),(6,2),(6,3),(6,4),(6,5),(6,6)\}$.

(d) $A \cap C = \{(5,4),(5,5),(5,6),(6,3),(6,4),(6,5),(6,6)\}$.

(e) $A \cap B = \phi$.

(f) $B \cap C = \{(5,2),(6,2)\}$.

(g) A Venn diagram is shown next.



2.20 (a) 6;

(b) 2;

(c) 2, 5, 6;

(d) 4, 5, 7, 8.

2.32 (a) By Theorem 2.3, there are $6! = 720$ ways.

(b) A certain 3 persons can follow each other in a line of 6 people in a specified order is 4 ways or in $(4)(3!) = 24$ ways with regard to order. The other 3 persons can then be placed in line in $3! = 6$ ways. By Theorem 2.1, there are total $(24)(6) = 144$ ways to line up 6 people with a certain 3 following each other.

(c) Similar as in (b), the number of ways that a specified 2 persons can follow each other in a line of 6 people is $(5)(2!)(4!) = 240$ ways. Therefore, there are $720 - 240 = 480$ ways if a certain 2 persons refuse to follow each other.