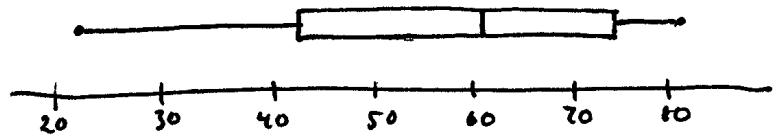


1	raw	sorted	
	xi		xi ²
1	43	22	1849
2	78	37	6084
3	37	40	1369
4	40	40	1600
5	68	43	4624
6	72	48	5184
7	55	51	3025
8	62	55	3844
9	22	59	484
10	82	62	6724
11	59	68	3481
12	48	70	2304
13	76	72	5776
14	74	74	5476
15	70	75	4900
16	51	76	2601
17	40	78	1600
18	75	82	5625

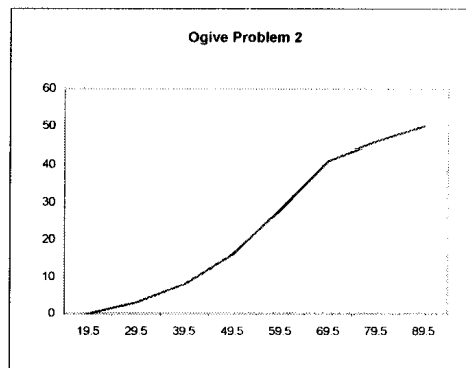
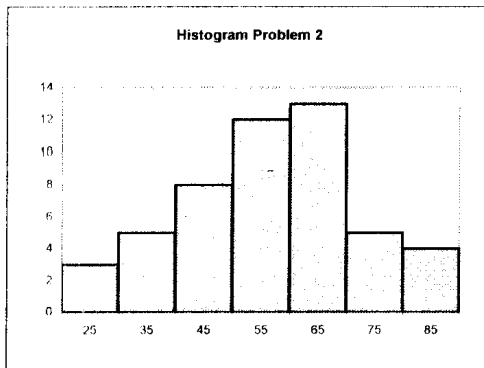
Q1	43
Q2	60.5
Q3	74
interquartile range	31
range	60
variance	298.0261
standard deviation	17.26343

2	2
3	7
4	3080
5	591
6	82
7	826405
8	2

count	18	
sum	1052	66550
mean	58.44444	
mode	40	

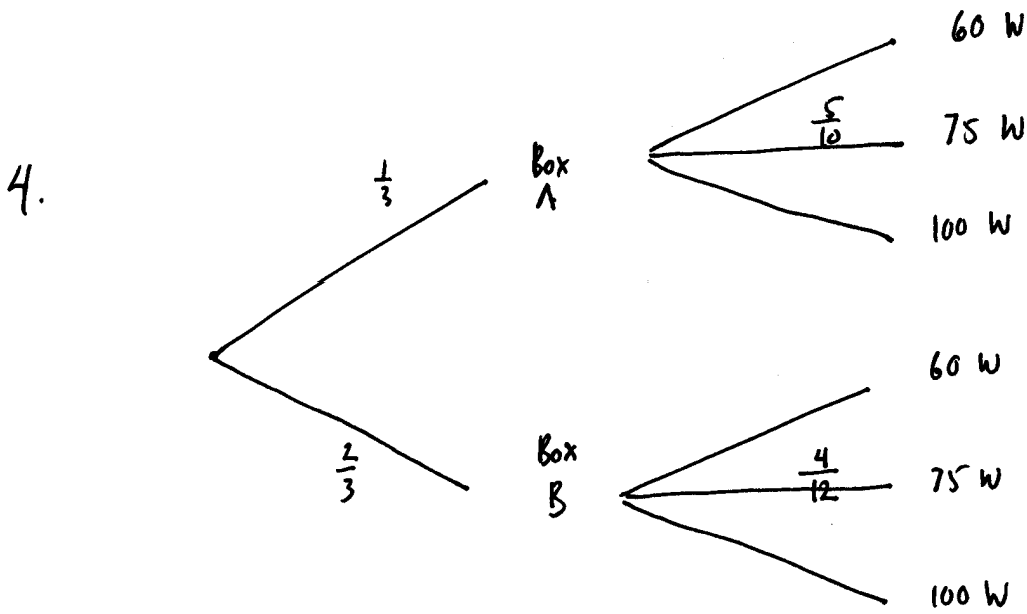


2	classes	marks	freq	xi*fi	xi ² *fi	less than	cum freq
		xi	fi				
	[20,30)	25	3	75	1875	19.5	0
	[30,40)	35	5	175	6125	29.5	3
	[40,50)	45	8	360	16200	39.5	8
	[50,60)	55	12	660	36300	49.5	16
	[60,70)	65	13	845	54925	59.5	28
	[70,80)	75	5	375	28125	69.5	41
	[80,90)	85	4	340	28900	79.5	46
						89.5	50
	sum		50	2830	172450		
	mean			56.6			
	variance			250.449			
	standard deviation			15.82558			
	class interval			10			



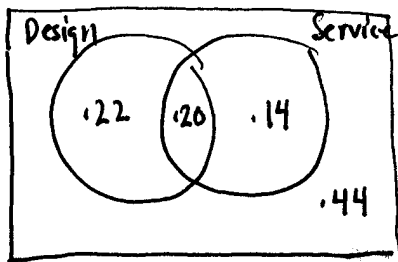
3. a) $\binom{8}{3} \binom{7}{4} = 56 \cdot 35 = 1960$

b) $\frac{\binom{8}{3} \binom{7}{4}}{\binom{15}{7}} = \frac{1960}{6435} = 0.3046$



$$P(75W) = \frac{1}{3} \frac{5}{10} + \frac{2}{3} \frac{4}{12} = \frac{7}{18} = 0.38\bar{8}$$

5. Airport



a) $P(\text{at least one}) = 0.22 + 0.20 + 0.14 = 0.56$

b) $P(\text{none}) = 1 - P(\text{at least one}) = 1 - 0.56 = 0.44$

6. (18 pts) The performance of certain machines is predicted by the results of a maintenance program.

Actual Performance	Prediction				Totals
	PA	PB	PC	PD	
AA	0.10	0.10	0.00	0.00	0.2
AB	0.05	0.20	0.04	0.01	0.3
AC	0.00	0.08	0.20	0.01	0.29
AD	0.00	0.02	0.04	0.15	0.21
Totals	0.15	0.4	0.28	0.17	1

- a. $P(PD) = 0.17$
- b. $P(AC) = 0.29$
- c. $P(AC | PD) = 0.01/0.17 = 0.0588$
- d. $P(AC \cap PD) = 0.01$
- e. $P(PA \cup PC) = 0.15+0.28 = 0.43$
- f. $P(AB \cup PC) = 0.30+0.28-0.04 = 0.54$
- g. $P(AC | AA) = 0$
- h. $P(PB | AD) = 0.02/0.21 = 0.095$
- i. $P((AC \cup AD) | PC) = (0.20+0.04)/0.28 = 0.857$

7. (8 pts) The following table is a cross-classification of 10,000 stockholders

Value of Stock	Number of securities in portfolio				Totals
	1-5	6-10	11-15	16+	
Up to \$1999.99	200	100	50	25	375
\$2000.00 - \$5999.99	100	400	200	35	735
\$6000.00 - \$10999.99	50	1000	200	70	1320
\$11000.00 - \$20999.99	40	1500	1100	100	2740
\$21000.00 or more	30	3500	1000	300	4830
Totals	420	6500	2550	530	10000

- a. $P(\text{owns 11-15 stocks with value between } \$6000 \text{ and } \$20999.99) = (200+1100)/10000 = 0.1300$
- b. $P(\text{owns 6-10 stocks}) = 6500/10000 = 0.6500$
- c. $P(\text{owns 1-5 stocks} | \text{value of } \$11000 \text{ \& } \$20999.99) = 40/2740 = 0.0146$
- d. $P(\text{value less } \$11000 | \text{owns 6-10 stocks}) = (100+400+1000)/6500 = 0.2308$