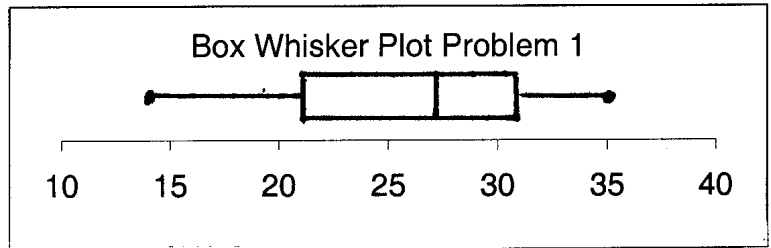
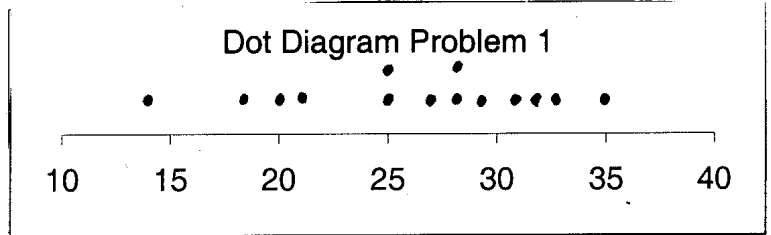


1.	raw	sorted	
	xi		xi <sup>2</sup>
	21	14	441
	28	18	784
	29	20	841
	32	21	1024
	35	25	1225
	33	25	1089
	27	27	729
	25	28	625
	31	28	961
	25	29	625
	18	31	324
	14	32	196
	20	33	400
	28	35	784

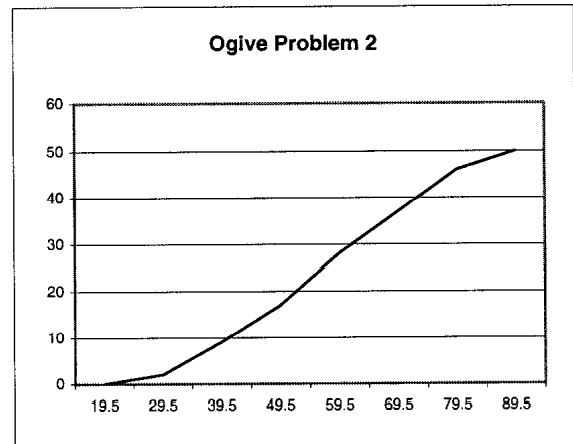
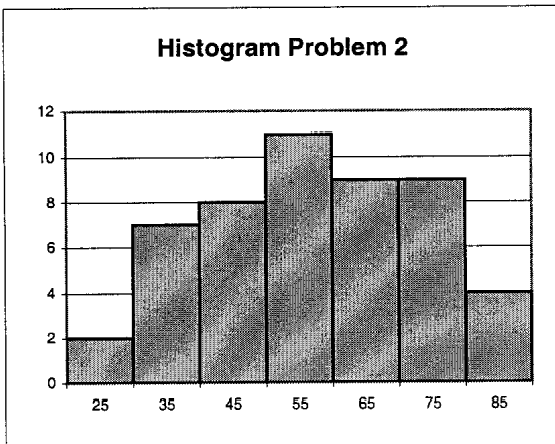
Q1	21
Q2	27.5
Q3	31
Range	21
variance	36.9011
standard deviation	6.074627

count	14	
sum	366	10048
mean	26.14286	
mode	none	



2.	classes	marks	freq	xi*fi	xi <sup>2</sup> *fi	less than	cum freq
		xi	fi				
	[20,30)	25	2	50	1250	19.5	0
	[30,40)	35	7	245	8575	29.5	2
	[40,50)	45	8	360	16200	39.5	9
	[50,60)	55	11	605	33275	49.5	17
	[60,70)	65	9	585	38025	59.5	28
	[70,80)	75	9	675	50625	69.5	37
	[80,90)	85	4	340	28900	79.5	46
						89.5	50
	sum		50	2860	176850		
	mean			57.2			
	variance				270.5714		
	standard deviation				16.44906		

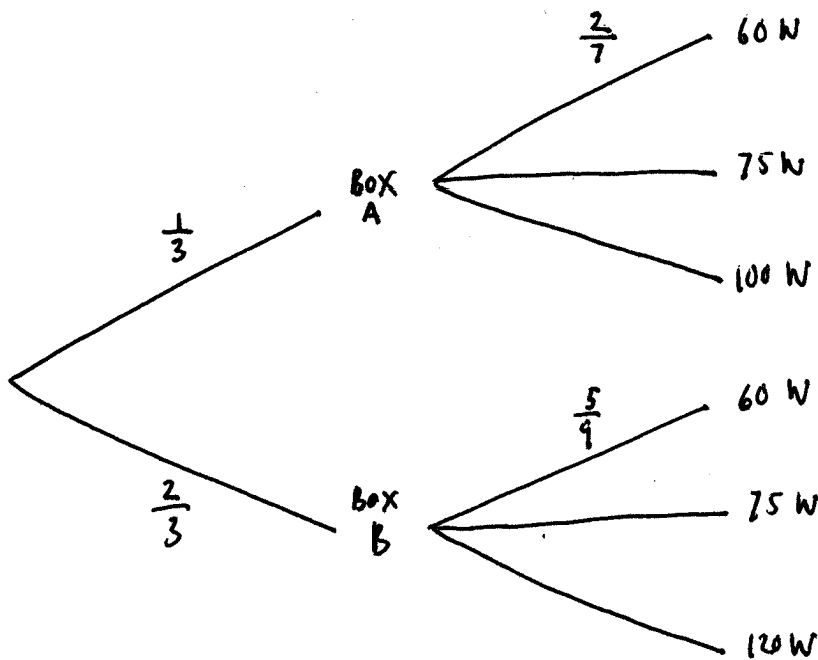
class interval = 10



3. a)  $\binom{8}{3} \binom{7}{2} = 56 \cdot 21 = 1176$

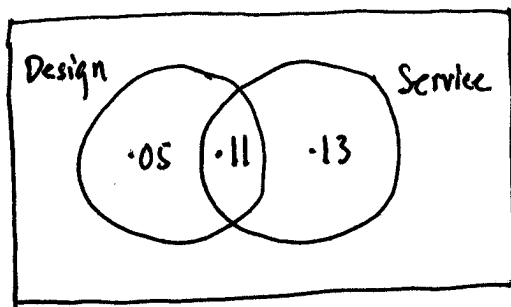
b)  $\frac{\binom{8}{3} \binom{7}{2}}{\binom{15}{5}} = \frac{1176}{3003} = 0.392$

4.



$$P(60W) = \frac{1}{3} \frac{2}{7} + \frac{2}{3} \frac{5}{9} = \frac{88}{189} = 0.466$$

5. Airport



a)  $P(\text{at least one}) = .05 + .11 + .13 = .29$

b)  $P(\text{only one}) = .05 + .13 = .18$

6. The performance of certain machines is predicted by the results of a maintenance program.

<i>Actual Performance</i>	<i>Prediction</i>				Totals
	PA	PB	PC	PD	
AA	0.10	0.10	0.00	0.00	0.20
AB	0.05	0.20	0.04	0.01	0.30
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	0.40	0.28	0.17	1.00

- a.  $P(PC) = 0.28 = 0.28$
- b.  $P(AD) = 0.21 = 0.21$
- c.  $P(AB | PC) = 0.04/0.28 = 0.143$
- d.  $P(AB \cap PD) = 0.01 = 0.01$
- e.  $P(PB \cup PC) = 0.40 + 0.28 = 0.68$
- f.  $P(AC \cup PB) = 0.29 + 0.40 - 0.08 = 0.61$
- g.  $P(AC | AA) = 0 = 0.00$
- h.  $P(PC | AD) = 0.04/0.21 = 0.190$
- i.  $P(AC \cup AD | PB) = (0.08 + 0.02)/0.40 = 0.025$

7. The following table is a cross-classification of 10,000 stockholders.

<i>Value of Stock</i>	<i>Number of securities in portfolio</i>				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.  $P(\text{owns 6-10 stocks with value between } \$6000 \text{ and } \$20999.99) = (1000 + 1500)/10000 = 0.250$
- b.  $P(\text{owns 11-15 stocks}) = 2550/10000 = 0.255$
- c.  $P(\text{owns 16 or more stocks} | \text{value between } \$11000 \text{ and } \$20999.99) = 100/2740 = 0.036$
- d.  $P(\text{value less } \$11000 | \text{owns 1-5 stocks}) = (200 + 100 + 50)/420 = 0.833$