

Solution to Statistical Exercises

Chapter 3 SIX SIGMA

1. Ans. = $1.0 - (0.9999966^8) = 1.0 - 0.999972 = 0.000028 = 28\text{ppm}$

Chapter 4 STATISTICAL PROCESS CONTROL

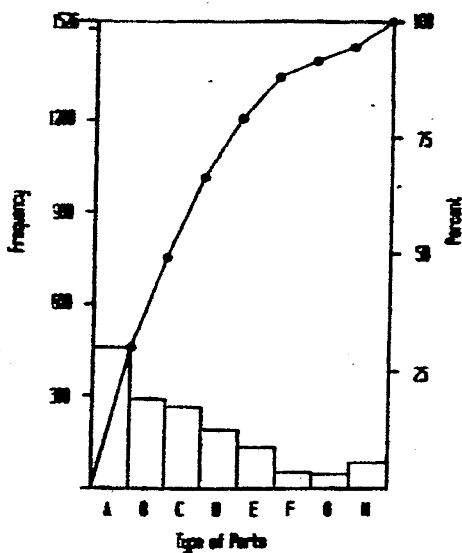
1. Replacement Parts: (6-month period)

	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Frequency</u>	<u>Cumulative Percent</u>
A. front burners	460	.30	460	.30
B. rear burners	290	.19	750	.49
C. oven regulators	265	.17	1015	.66
D. oven door	193	.13	1208	.79
E. burner control	135	.09	1343	.88
F. timer	53	.03	1396	.91
G. drawer rollers	46	.03	1442	.94
H. All others	<u>84</u>	<u>.06</u>	1526	1.00
	1526	1.00		

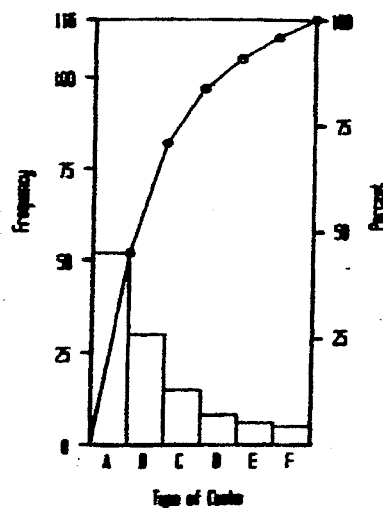
2. Downtime Costs: (3-month period)
in thousands of dollars

	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Frequency</u>	<u>Cumulative Percent</u>
A. lost cooling	52	.45	52	.45
B. back pressure reg.	30	.26	82	.71
C. adjust feed worm	15	.13	97	.84
D. valve replacement	8	.07	105	.91
E. jam copperhead	6	.05	111	.96
F. All others	<u>5</u>	<u>.04</u>	116	1.00
	116	1.00		

(1)



(2)

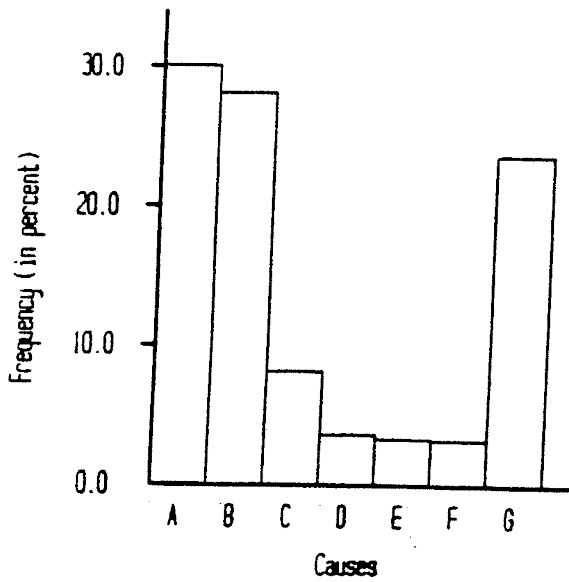


3	Cause of accident	in percent
	a. right-of-way violation	30.1
	b. driving too fast for condition	28.1
	c. following too closely	8.1
	d. improper turn	3.6
	e. driving left of center	3.3
	f. improper overtaking	3.2
	g. all other	<u>23.6</u>
		100.0

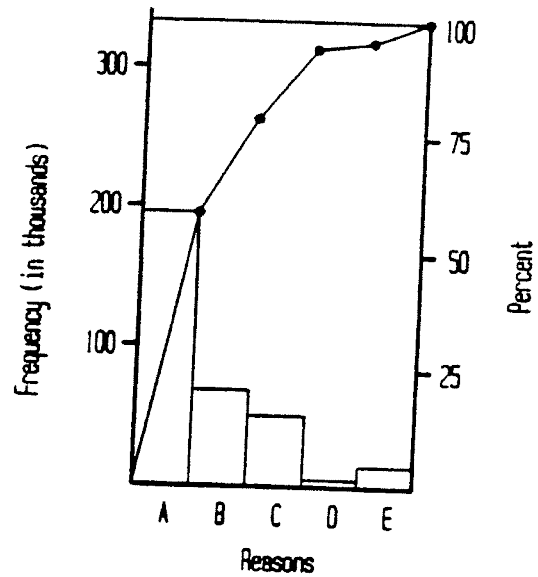
4. Reason for Shipment Return: (quarter)
in thousands

	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Frequency</u>	<u>Cumulative Percent</u>
A. refused	195	.585	195	.59
B. wrong address	68	.20	263	.79
C. wrong selection	50	.15	313	.94
D. order canceled	5	.02	318	.96
E. All other	<u>15</u>	<u>.045</u>	333	1.00
	333	1.00		

(3)



(4)



5. Paint Nonconformities: (1-month)

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
A. light spray	582	.31	582	.31
B. runs	434	.23	1016	.54
C. drips	227	.12	1243	.66
D. blisters	212	.11	1455	.77
E. splatter	141	.07	1596	.84
F. bad paint	126	.07	1722	.91
G. overspray	109	.06	1831	.97
H. All others	50	.03	1881	1.00
	1881	1.00		

