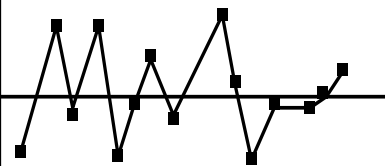
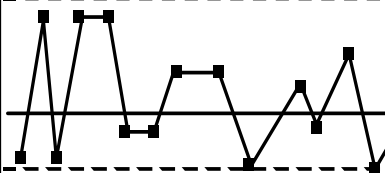


CONTROL		CHART TYPE		
CENTRAL TENDENCY: \bar{X} , \bar{X} CHART  $UCL_{\bar{X}} = \bar{\bar{X}} + A_2 \bar{R}$ $\bar{\bar{X}} = \frac{\sum \bar{X}}{k}$ $LCL_{\bar{X}} = \bar{\bar{X}} - A_2 \bar{R}$		# OF OBSER. (n)	\bar{X}	$\sigma = \frac{\bar{R}}{d_2}$
VARIATION: MR, R CHART  $UCL_R = D_4 \bar{R}$ $\bar{R} = \frac{\sum R}{k}$		IMR	A_2	d_2
		n = 2	2.66	1.128
		n = 3	1.880	1.128
		n = 4	1.023	1.693
		n = 5	0.729	2.059
		n = 5	0.577	2.326
		ANY SAMPLE SIZE	$\sigma_A = \frac{\sigma_1}{\text{SQR}n}$	A: AVERAGES I: INDIVIDUALS SQR: SQUARE ROOT
SPECIAL CAUSES EXIST WHEN: <ul style="list-style-type: none"> • RUN - 7 PTS ONE SIDE OF THE CTR LINE • POINT OUTSIDE CONTROL LIMITS • TREND - 6 SUCCESSIVE INC OR DEC PTS • TWO POINTS IN A ROW NEAR LIMITS • CYCLES • PATTERNS • STRATIFICATION • HUGGING • MEAN SHIFTS $>1\sigma$ 				