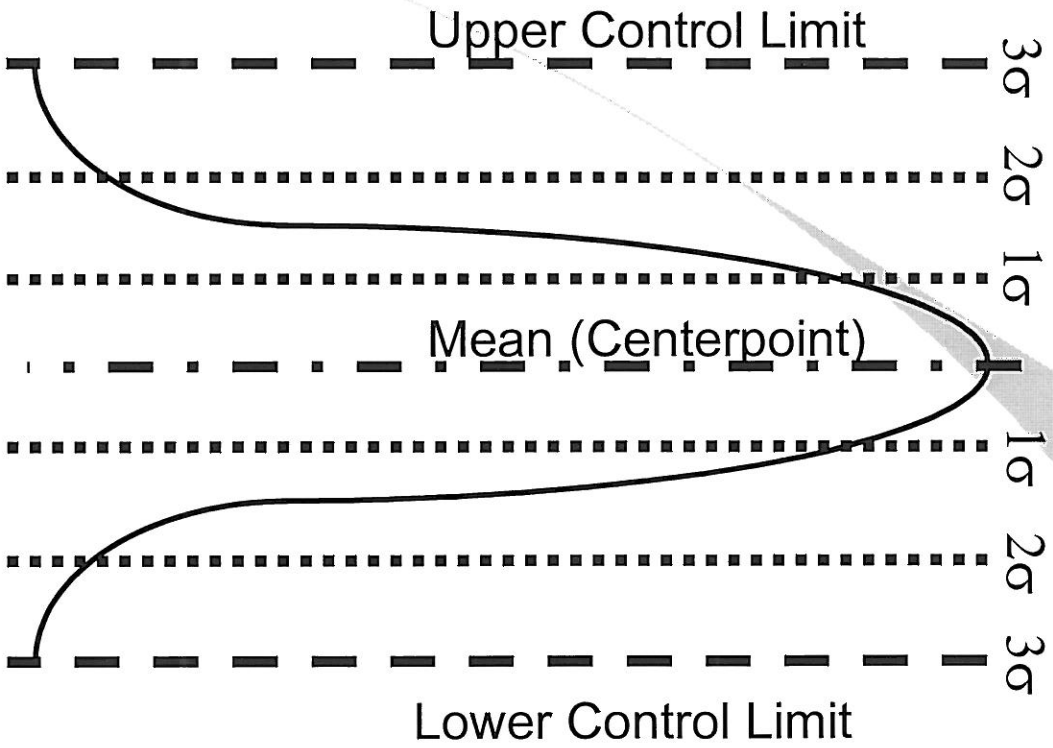
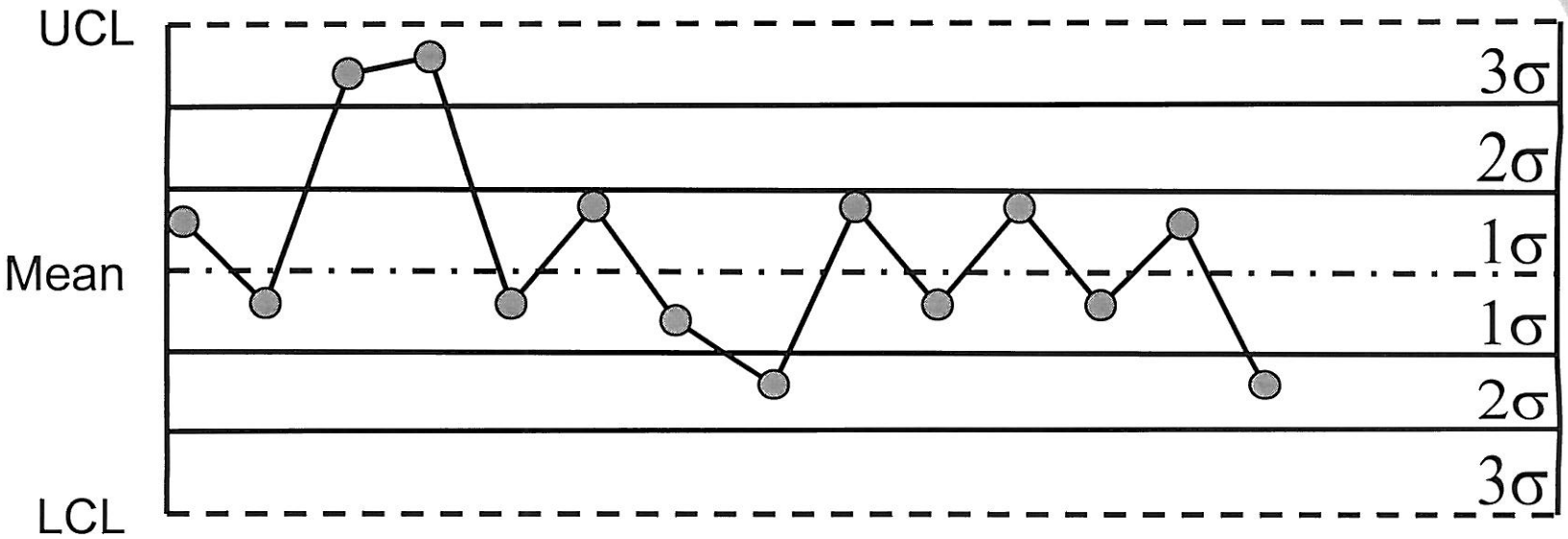
X-Bar-R Chart



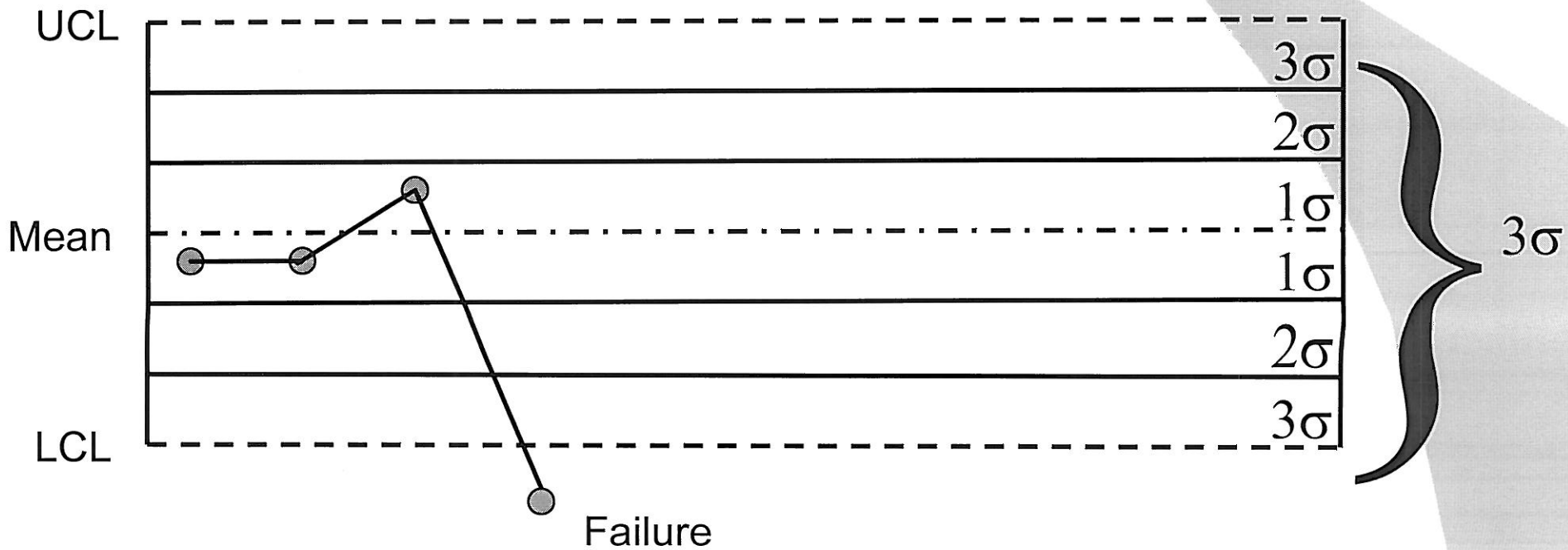


3σ

Charting Methods

- Shewhart tests: (aka Western Electric)

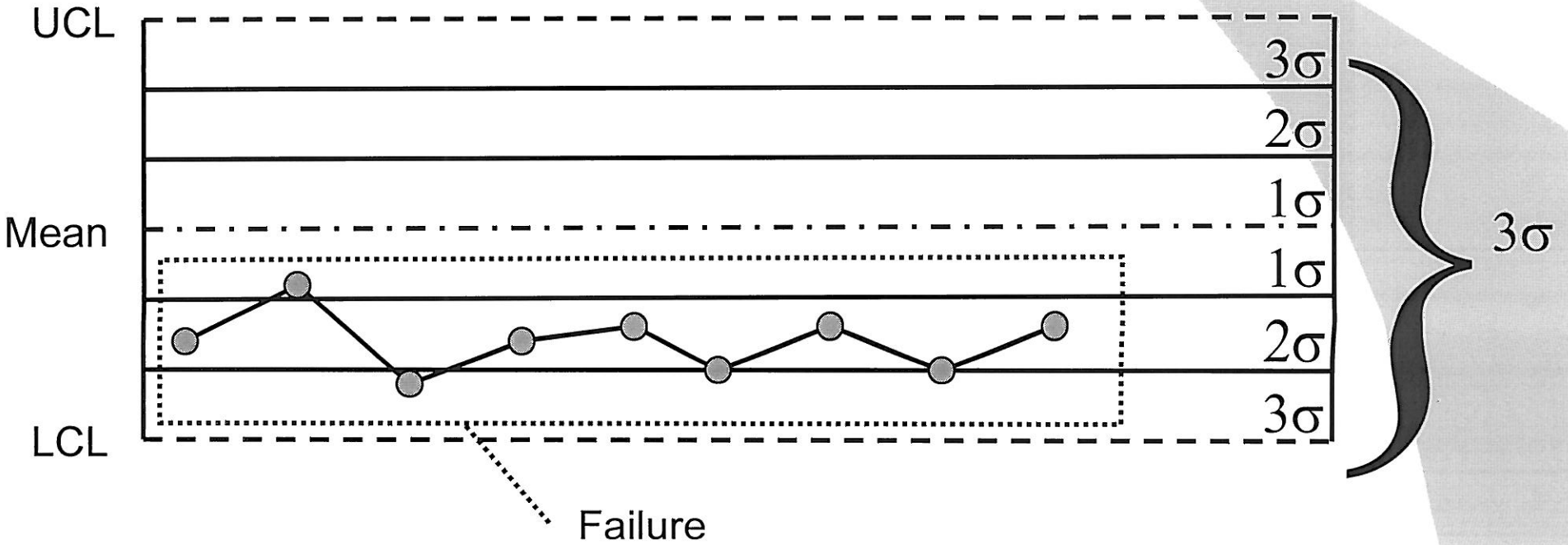
  1. One point outside control limits:



Charting Methods

- Shewhart tests: (aka Western Electric)

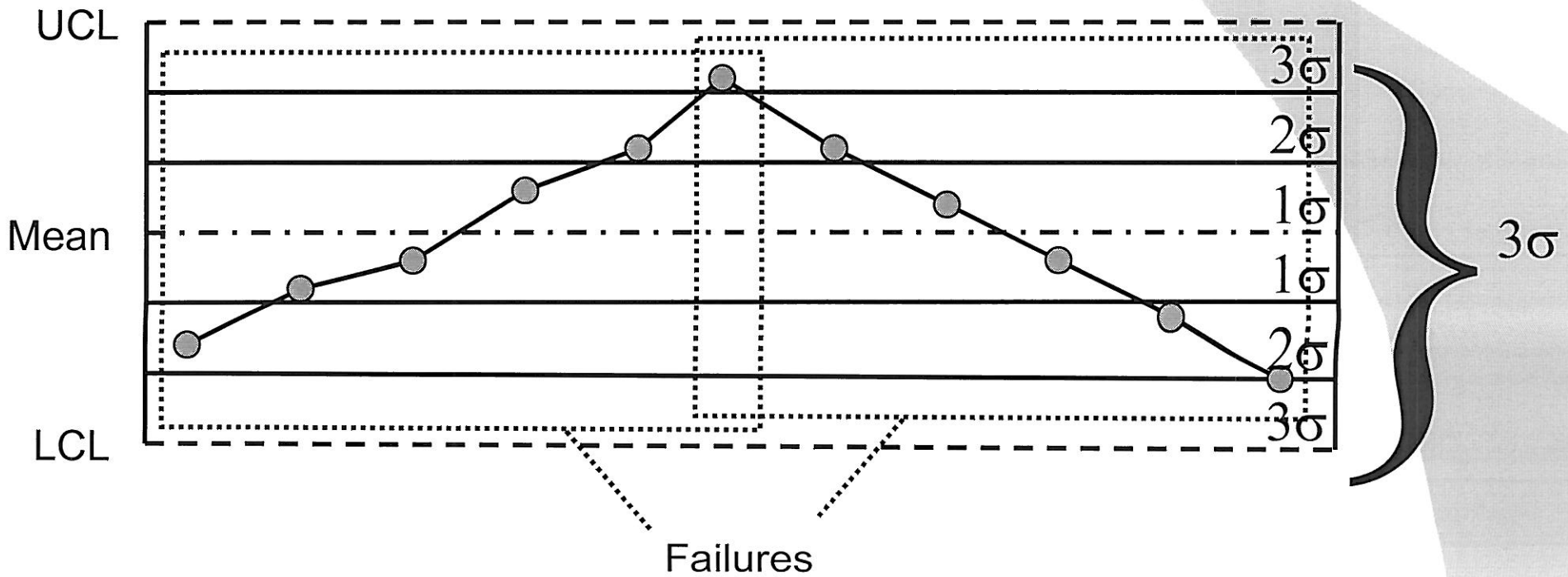
  2. Nine points in a row on one side of the mean:



Charting Methods

- Shewhart tests: (aka Western Electric)

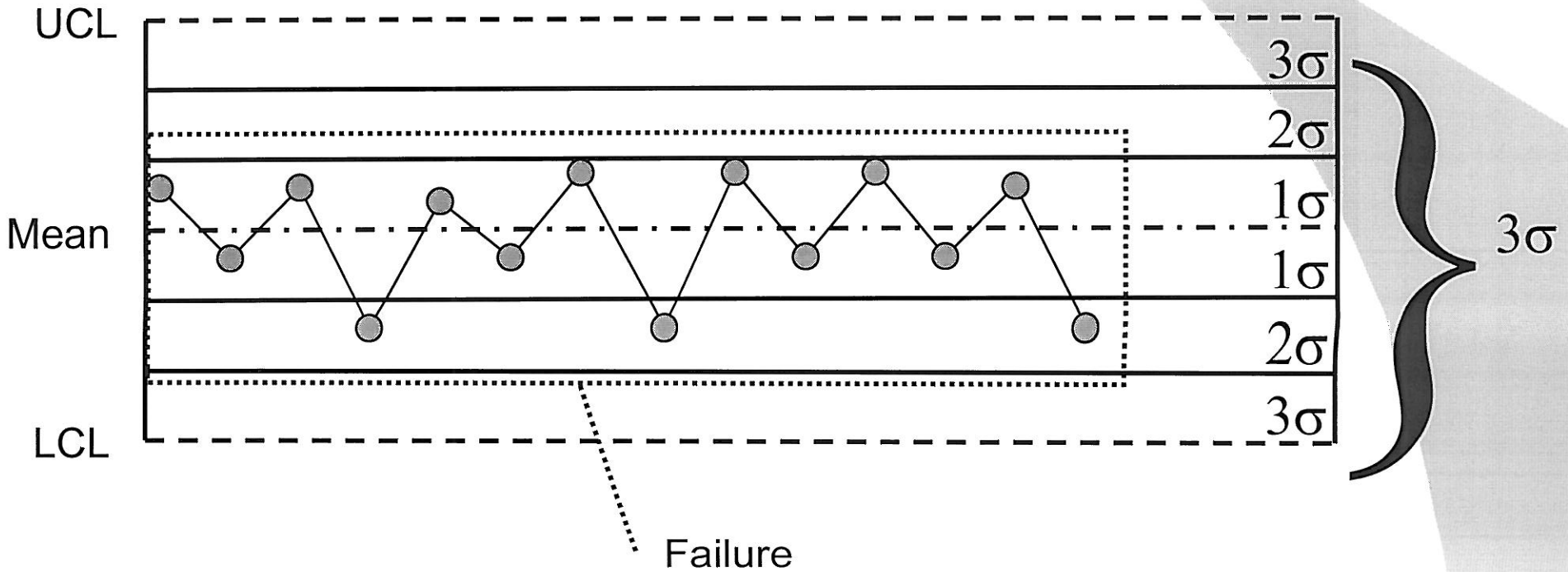
  3. Six points in a row steadily increasing or decreasing:



Charting Methods

- Shewhart tests: (aka Western Electric)

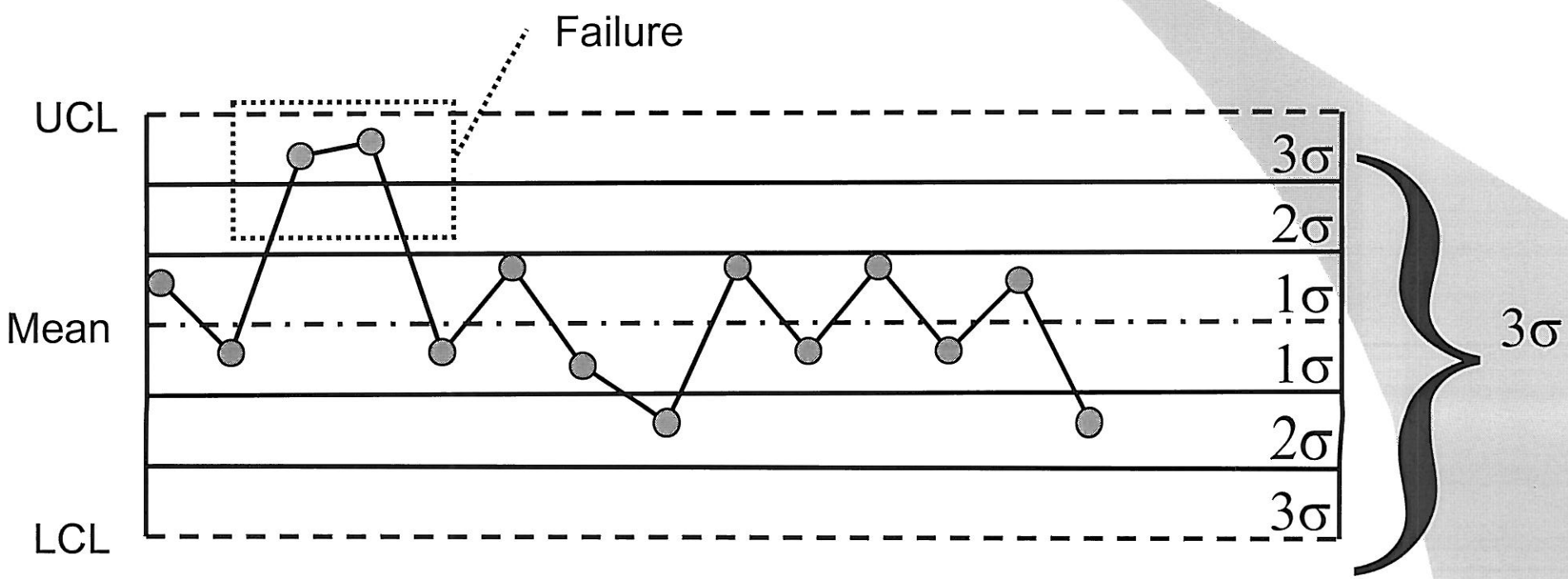
  4. 14 points in a row alternating above or below the mean.



Charting Methods

- Shewhart tests: (aka Western Electric)

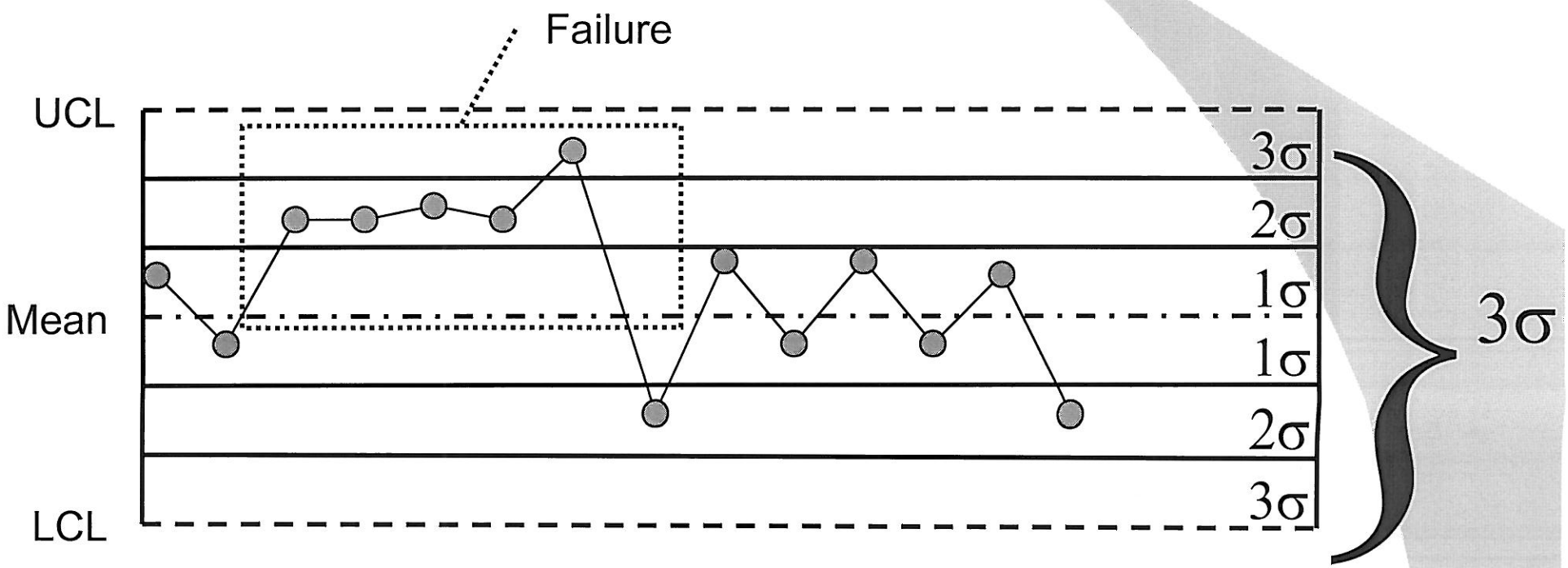
  5. 2 out of 3 points in 3σ zone or beyond.



Charting Methods

- Shewhart tests: (aka Western Electric)

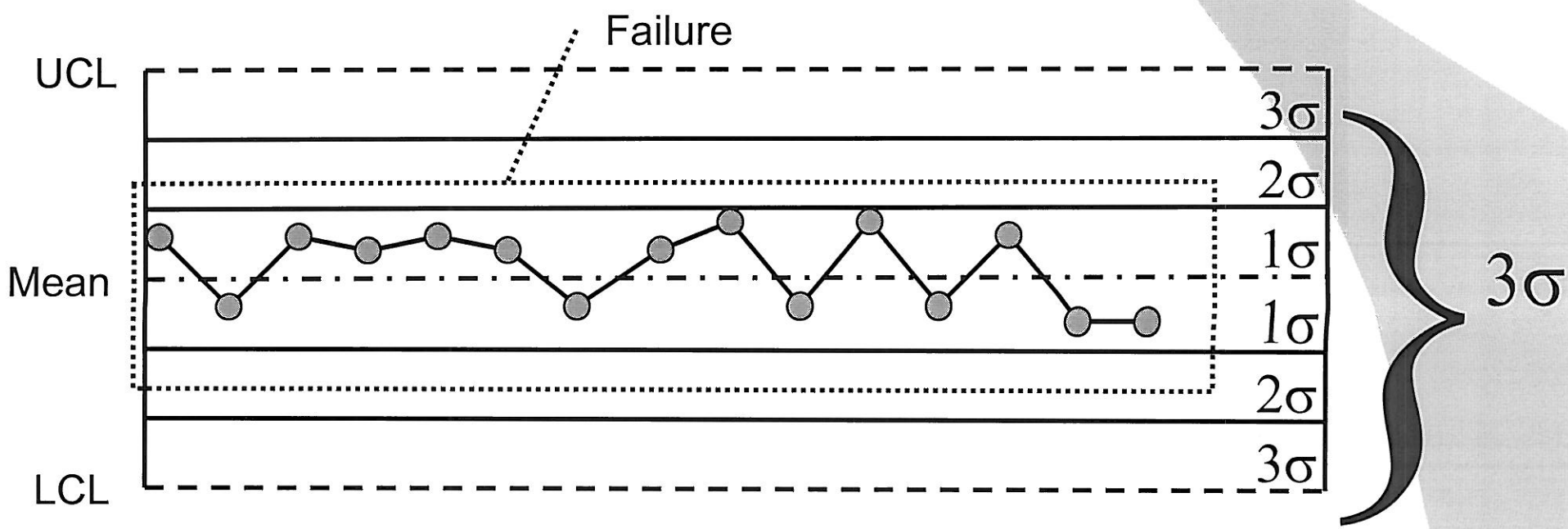
  6. 4 out of 5 points in 2σ zone or beyond.



Charting Methods

- Shewhart tests: (aka Western Electric)

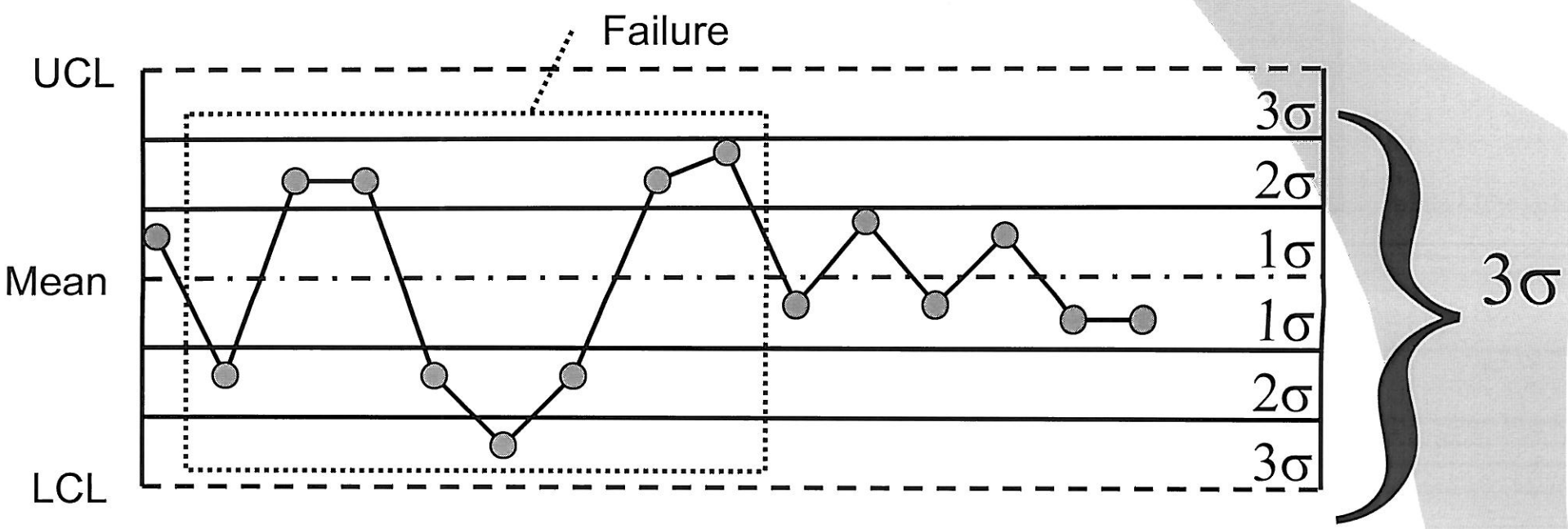
  7. 15 points in 1σ zone either above or below the mean.



Charting Methods

- Shewhart tests: (aka Western Electric)

  8. 8 points on either or both sides of the mean, with no points in 1σ zone.



Hyundai Charting Methods

H.S.A. currently plans to employ 4 of the 8 tests to help detect failures. They Are:

1. 1 point beyond 3σ zone.
2. 6 points increasing / decreasing in a row.
3. 9 points above or below the mean.
4. 2 out of 3 points in 3σ zone or beyond.