

#4, Solution 3: $(-0.9165)(10 - 51) + (-0.4)(6 - 37) = 50.0$.

#5, Solution 27: thus this is Leonardo's MA(1) model.

#5, Q.38:

Select all of the following points that would be in a simple quintile plot for the model.

- A. Quintile 1: Predicted 11.5, observed 13
- B. Quintile 2: Predicted 26, observed 27
- C. Quintile 3: Predicted 36, observed 40.5
- D. Quintile 4: Predicted 80.5, observed 70
- E. Quintile 5: Predicted 94, observed 83.5

#6, Q.17: The **larger** group contains 60 defaults.

#8, solution to Q.14 is missing.

14. E. $Z = N / (N + K)$. $\Rightarrow 1 - Z = K / (N + K)$.

For two years claims-free: $0.07286 = 0 Z + (1 - Z) \mu = \mu K / (2+K)$. $\Rightarrow 0.07286K + 0.14572 = \mu K$.

For 3 years claims-free: $0.06800 = 0 Z + (1 - Z) \mu = \mu K / (3+K)$. $\Rightarrow 0.06800K + 0.20400 = \mu K$.

Subtracting the two equations: $0.00486K = 0.05828$. $\Rightarrow K = 11.99$. $\Rightarrow \mu K = 1.0193$.

For ten years claims-free: $0 Z + (1 - Z) \mu = \mu K / (10+K) = 1.0193 / 21.99 = 4.635\%$

Comment: Similar to Q. 8.31 in "Mahler's Guide to Buhlmann Credibility."

$\mu = 1.0193/11.99 = 0.0850$.