Problem 1. Using dataset 1 and the following equations, calculate existing and next year PSIs for all segments.
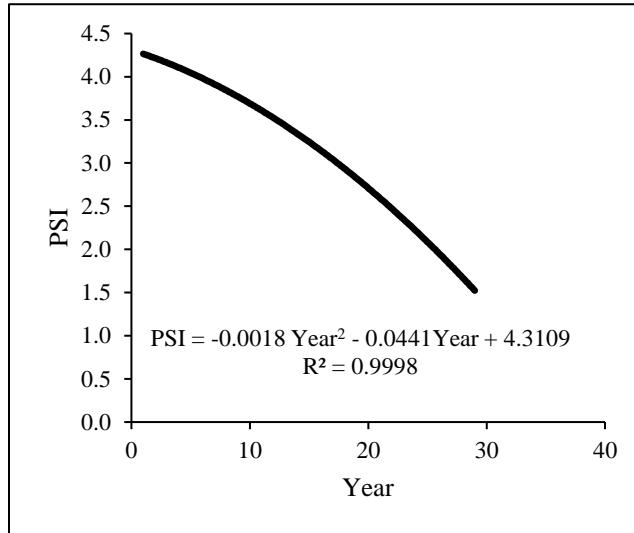
$$PSI = 5.35e^{-0.0058*IRI} - 4RUT^2 - 3\left(1 - \left(\frac{PCI}{100}\right)\right)$$

Problem 2. Using dataset 2, develop pavement deterioration models for three types of roads with different functional classification? Identity the one with lowest traffic volume?

Problem 3. Using dataset 3, develop a pavement deterioration model. Provide results from statistical diagnostics?

Problem 4. Using dataset 4, develop a pavement deterioration model considering deterministic and Markov process techniques both?

Problem 5. Using dataset 5, develop a pavement performance model considering PSI as the dependent; and RUT, IRI, PCI as the independent variables? Provide statistical diagnostics including co-relation matrix?