

With statistical data on 10,000 gears that were installed in 8000 transmission systems and 2000 pumping systems, 1% of gears in the transmission systems failed after five years, and five gears in the pumping systems failed after five years. What is the reliability of the gear in five years?

Solution

The number of gears failed in transmission systems: $M = 0.01(8000) = 80$

The number of gears failed in pumping systems: $N = 5$

The total number of gears failed: $M + N = 85$

The reliability of the gear: $R = \frac{10000-85}{10000} = 0.9915$