Assignment #17

A company repairs broken machines arriving on average of three per hour and the breakdowns are distributed in a Poisson manner. Downtime costs the company $25/hour per machine and each worker gets $4 per hour.

One worker can service machines at an average rate of 5 per hour, distributed exponentially.

Two workers working together can service 7 per hour, distributed exponentially.

Finally, a team of three workers can do 8 per hour, distributed exponentially.

What is the optimal (total minimum cost) maintenance crew size for repairing the machines?