

*Show all steps.*

Let  $\mathbf{X}_1, \mathbf{X}_2, \dots, \mathbf{X}_{25}$  be independent Poisson random variables with parameter  $\lambda = 4$ . Use the Central Limit Theorem to approximate

$$\mathbb{P} \left( \sum_{i=1}^{25} \mathbf{X}_i \leq 110 \right).$$

Your answer should contain  $\Phi$ . Here you do not have to use the continuity correction.

Here  $n\mu = 100, n\sigma^2 = 100$  and therefore

$$\mathbb{P} \left( \sum_{i=1}^{25} \mathbf{X}_i \leq 110 \right) \approx \mathbb{P} (100 + 10Z \leq 110) = \Phi(1)$$

*End of the quiz*