4 **(a)** The distance that car tyres of a certain make can travel before they need to be replaced has a normal distribution. A survey of a large number of these tyres found that the probability of this distance being more than $36\,800$ km is 0.0082 and the probability of this distance being more than $31\,000$ km is 0.6915. Find the mean and standard deviation of the distribution. [5]

(b) The random variable X has the distribution $N(\mu, \sigma^2)$, where $3\sigma = 4\mu$ and $\mu \neq 0$. Find $P(X < 3\mu)$.

[3]