8 A market gardener records the masses of a random sample of 100 of this year's crop of plums. The table shows his results.

Mass, m grams	$m < 25$	$25 \leq m < 35$	$35 \leq m < 45$	$45 \leq m < 55$	$55 \leq m < 65$	$65 \leq m < 75$	$m \geq 75$
Number of plums	0	3	29	36	30	2	0

(a) Explain why the normal distribution might be a reasonable model for this distribution. **[1]**

The market gardener models the distribution of masses by $\mathrm{N}\left(47.5, 10^2\right)$.

(b) Find the number of plums in the sample that this model would predict to have masses in the range:

(i) $35 \leq m < 45$ **[2]**

(ii) $m < 25$. **[2]**

(c) Use your answers to parts **(b)(i)** and **(b)(ii)** to comment on the suitability of this model. **[1]**

The market gardener plans to use this model to predict the distribution of the masses of next year's crop of plums.

(d) Comment on this plan. **[1]**