5. A recycling centre measures the weight of glass deposited by the public each day.

The weight of glass, S kg, deposited at the recycling centre in a day during the summer can be modelled by $S \sim \mathrm{N}(700, 50^2)$

(a) Using standardisation and showing your working, find the probability that, in one randomly selected day during the summer,

(i) more than 640 kg of glass is deposited at the recycling centre,

(2)

(ii) 700 kg of glass, correct to the nearest 50 kg, is deposited at the recycling centre.

(5)

The weight of glass, W kg, deposited at the recycling centre in a day during the winter can be modelled by $W \sim \mathrm{N}(\mu, \sigma^2)$

(b) Given that $\mathrm{P}(W > 680) = 0.0668$ and $\mathrm{P}(W < 599) = 0.3$

(i) find **two** equations in terms of μ and σ

(3)

(ii) Hence, showing your working, find the value of μ and the value of σ

(3)

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Question 5 continued

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Question 5 continued

(Total for Question 5 is 13 marks)