6. The label on a jar of Amy's jam states that the jar contains about 400 grams of jam. For each jar that contains less than 388 grams of jam, Amy will be fined £100. If a jar contains more than 410 grams of jam then Amy makes a loss of £0.30 on that jar.

The weight of jam, A grams, in a jar of Amy's jam has a normal distribution with mean μ grams and standard deviation σ grams. Amy chooses μ and σ so that
$P(A < 388) = 0.001$ and $P(A > 410) = 0.0197$

(a) Find, using standardisation, the value of μ and the value of σ.

(5)

Amy can sell jars of jam containing between 388 grams and 410 grams for a profit of £0.25

(b) Calculate the expected amount, in £s, that Amy receives for each jar of jam.

(4)

(Total for Question 6 is 9 marks)