6. Akia selects at random a value from the continuous random variable W, which is uniformly distributed over the interval $[a\ ,\ b]$

The probability that Akia selects a value greater than 17 is $\frac{1}{5}$

The probability that Akia selects a value less than k is $\frac{53}{60}$

(a) Find the probability that Akia selects a value between 17 and k

(2)

It is known that $\text{Var}(W) = 75$

(b) (i) Find the value of a and the value of b

(4)

(ii) Find the value of k

(2)

(c) Find $\text{P}(-5 < W < 5)$

(2)

(d) Find $\text{E}(W^2)$

(2)

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(Total for Question 6 is 12 marks)

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