6. A rectangle $PQRS$ has a fixed perimeter of 40 cm.

The continuous random variable X cm represents the length of side PQ and is uniformly distributed over the interval [0, 20]

The continuous random variable A cm^2 represents the area of $PQRS$

(a) Find the value of E(A)

(6)

(b) Find the probability that the area of $PQRS$ is more than 5 times the area of a square whose side has length X cm.

(4)

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Question 6 continued

(Total for Question 6 is 10 marks)

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