8. The random variable X is normally distributed with mean μ and variance 36

Given that

$$P(\mu - 2k < X < \mu + 2k) = 0.6$$

(a) find the value of k

(4)

The random variable Y is normally distributed with mean μ and standard deviation σ

Given that

$$2\mu = 3\sigma^2 \quad \text{and} \quad P\left(Y > \frac{3}{2}\mu\right) = 0.0668$$

(b) find the value of μ and the value of σ

(5)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Question 8 continued

Question 8 continued

(Total for Question 8 is 9 marks)

TOTAL FOR PAPER IS 75 MARKS

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA