7. The continuous random variable X is uniformly distributed over the interval $[a , b]$

(a) Find an expression, in terms of a and b, for $E(3 - 2X)$

(2)

(b) Find $P(X > \frac{1}{3}b + \frac{2}{3}a)$

(2)

Given that $E(X) = 0$

(c) find an expression, in terms of b only, for $E(3X^2)$

(3)

Given also that the range of X is 18

(d) find $Var(X)$

(2)

(Total for Question 7 is 9 marks)

TOTAL FOR PAPER IS 75 MARKS