4. The discrete random variable X has the following probability distribution

x	1	2	3	4	5
$P(X = x)$	a	a^2	0.26	0.34	0.16

where a is a constant.

(a) Use algebra to show that $a = 0.2$

(3)

(b) Find $E(2X + 4)$
You must show your working.

(3)

(c) Find $\text{Var}(2X + 4)$
You must show your working.

(4)

(d) Hence, write down the value of $\text{Var}(4 - 2X)$

(1)

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Question 4 continued

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Question 4 continued

(Total for Question 4 is 11 marks)