3. The discrete random variable X has the following probability distribution,

x	–4	–2	0	2	6
$P(X = x)$	r	s	t	s	r

where r, s and t are probabilities.

Given that $E(X) = 0.36$

(a) show that $r = 0.18$

(2)

Given also that $\text{Var}(X) = 10.8304$

(b) find the value of s **and** the value of t

(5)

(c) Find

(i) $E(7 - 5X)$

(ii) $\text{Var}(7 - 5X)$

(3)

(d) Find $P(2X^2 > 7 - 5X)$

(4)

(Total for Question 3 is 14 marks)