

Question	Scheme	Marks	AOs
4(a)	S and A since there is no intersection between A and S or the probability of S and A happening is zero	B1	1.2
		(1)	
(b)	$(0.1 + p) \cdot 0.25 = 0.1$ [$p = 0.3$]	M1	3.1b
	$q = 0.15$ or $1 - q = 0.85$	M1	1.1b
	$r = 1 - p - q - 0.25$	M1dd	3.1b
	$= 0.3$	A1	1.1b
		(4)	
(c)	Independent since $0.25 \times 0.2 = 0.05$	B1	2.2a
		(1)	
(d)	The teacher's belief would appear not to be justified as D and S are independent	B1ft	2.4
		(1)	
(7 marks)			
Notes:			
(a) B1: For S and A and a sensible reason			
(b) M1: For forming a correct equation in terms of p using the information given. M1: Writing or using $q = 0.15$ or $1 - q = 0.85$ M1dd: dependent on both previous M marks being awarded. For using their values for p and q to form a correct equation to enable them to find r A1: cao			
(c) B1: Yes and a suitable reason to support their answer bringing together the two pieces of information to draw the correct conclusion			
(d) B1: A correct comment following their answer to part (c) with reference to the teachers belief.			