Question Number	Scheme	Marks
5(a)	$\left[\mathrm{E}\left(R^2\right)=\right]2^2\times0.25+3^2\times0.3+4^2\times0.15+5^2\times0.1+6^2\times0.2$ (= 15.8*)	B1cso*
		(1)
(b)	$\left[\mathrm{sd}\ (R)=\right]\sqrt{15.8-3.7^2}$	M1
	$=\sqrt{2.11}$	
	Standard deviation = 1.4525…. awrt 1.45	A1
		(2)
(c)	$d=1$	B1
		(1)
(d)	$0.1+0.2+0.1+a+b=1$ oe	M1
	$2\times0.1+3\times0.2+4\times0.1+5a+6b=4.55$ oe	M1
	$5(0.6-b)+6b=3.35$ **or** $5a+6(0.6-a)=3.35\ \Rightarrow a=0.25$ **or** $b=0.35$	M1
	$c=0.4+"0.25"$ **or** $c=1-"0.35"$	M1
	$c=0.65$ oe	A1
		(5)
(e)	$0.9\times0.75\times0.1$	M1
	= 0.0675	A1
		(2)
(f)	For identifying that if Jessie scores 2, Pabel has no spin oe may be implied	M1
	$[0.10\times0+]0.2\times0.3+0.1\times0.15+"0.25"\times0.1+"0.35"\times0.2$	M1
	= 0.17	A1
		(3)
Notes		**Total 14**

(a)	**B1**	Correct calculation with all products seen (allow 1 + 2.7 + 2.4 + 2.5 + 7.2) Figures may be seen in table before part (a). Condone missing addition signs if products seen in table.
(b)	**M1**	Use of formula including the square root
	A1	awrt 1.45 (correct answer with no working scores M1A1)
(c)	**B1**	For 1
(d)	**M1**	Allow equivalents eg $a+b=0.6$
	M1	Allow equivalents eg $5a+6b=3.35$
	M1	Correct method to eliminate *a* or *b* (implied by a correct value for *a* or *b*) This mark can still be scored even if the method leads to a value of *a* or *b* which is not a probability. May see $a = c - 0.4$ to eliminate *a* or $b = 1 - c$ used to eliminate *b*
	M1	A complete method for finding the value of *c* (condone using any value of *a* and *b* for this mark)
	A1	0.65 oe
(e)	**M1**	For the product of 3 probabilities
	A1	0.0675 or exact equivalent fraction eg $\frac{27}{400}$
(f)	**M1**	Identifying that if Jessie scores 2, there is only one spin or the 4 correct possibilities only
	M1	At least 3 correct non-zero probability products ft their *a* and *b* (an answer of 0.195 scores M0M1A0)
	A1	0.17