Question Number	Scheme	Marks
6 (a)	Box A: $P(1)=\frac{1}{4}$ $P(2)=\frac{3}{4}$ Box B: $P(2)=\frac{1}{5}$ $P(5)=\frac{4}{5}$	B1
	Totals (T) 5, 6, 8, 9, 11, 12	B1
	(1, 2, 2) (1, 2, 5) [(1, 5, 2)] (1, 5, 5) (2, 2, 2) (2, 2, 5) [(2, 5, 2)] (2, 5, 5)	B1
	$\left[P(T=5)=\right]\frac{1}{4}\times\frac{1}{5}\times\frac{1}{5}\left[=\frac{1}{100}\right]$ $\left[P(T=6)=\right]\frac{3}{4}\times\frac{1}{5}\times\frac{1}{5}=\left[\frac{3}{100}\right]$	M1
	$\left[P(T=8)=\right]2\times\frac{1}{4}\times\frac{1}{5}\times\frac{4}{5}=\left[\frac{8}{100}\right]$ $\left[P(T=9)=\right]2\times\frac{3}{4}\times\frac{1}{5}\times\frac{4}{5}=\left[\frac{24}{100}\right]$	M1
	$\left[P(T=11)=\right]\frac{1}{4}\times\frac{4}{5}\times\frac{4}{5}=\left[\frac{16}{100}\right]$ $\left[P(T=12)=\right]\frac{3}{4}\times\frac{4}{5}\times\frac{4}{5}=\left[\frac{48}{100}\right]$	M1
	t: 5, 6, 8, 9, 11, 12 $P(T=t)$: $\frac{1}{100}$, $\frac{3}{100}$, $\frac{8}{100}\left[=\frac{2}{25}\right]$, $\frac{24}{100}\left[=\frac{6}{25}\right]$, $\frac{16}{100}\left[=\frac{4}{25}\right]$, $\frac{48}{100}\left[=\frac{12}{25}\right]$	A1
		(7)
(b)	$m=2$ $m=5$	B1
	$\left[P(M=2)=\right]'\frac{1}{100}'+'\frac{8}{100}'+\frac{3}{100}'+'\frac{24}{100}'=\left[\frac{36}{100}\right]$	M1
	$\left[P(M=5)=\right]'\frac{16}{100}'+'\frac{48}{100}'=\left[\frac{64}{100}\right]$ or $P(M=5)=1-'P(M=2)'$	M1
	m: 2, 5 $P(M=m)$: $\frac{36}{100}$, $\frac{64}{100}$	A1
		(4)
	Notes	**Total 11**
(a)	**B1** All 4 correct probabilities – may be seen in an equation	
	B1 All 6 totals correct with no extras (ignore units if stated) (condone 8 or 9 listed twice)	
	B1 All 6 basic combinations correct, either seen or used (implied by the 3rd M1 mark) Condone any permutation of the 6 basic combinations for this mark	
	M1 Correct method for **one** probability (ft their probabilities)	
	M1 Correct method for **five** probabilities (ft their probabilities)	
	M1 Correct method for all **six** probabilities (ft their probabilities)	
	A1 cao Need not be in a table but probabilities must be attached to the correct total	
(b)	**B1** For both values of m (no extras) If $m=1$ is stated it must be stated that its probability is 0	
	M1 Ft part (a) For a correct method to find P(M = '2') For this mark there must only be 2 probability calculations	
	M1 Ft part (a) For a correct method to find P(M = '5') For this mark there must only be 2 probability calculations	
	A1 cao Need not be in a table but probabilities must be attached to the correct total	