Question	Answer	Marks	Guidance
(a)	${}^5C_1 \times {}^7C_4$	**M1**	${}^7C_4 \times k$, k integer $\geqslant 1$ Condone ${}^5P_1$ for M1 only
	175	**A1**	
		2	

Question	Answer	Marks	Guidance
(b)	2B 1G 2A $^3C_2 \times {}^4C_1 \times {}^5C_2 = 120$ 2B 2G 1A $^3C_2 \times {}^4C_2 \times {}^5C_1 = 90$ 2B 3G $^3C_2 \times {}^4C_3 = 12$ 3B 1G 1A $^3C_3 \times {}^4C_1 \times {}^5C_1 = 20$ 3B 2G $^3C_3 \times {}^4C_2 = 6$	**M1**	$^3C_x \times {}^4C_y \times {}^5C_z$, $x + y + z = 5$, x,y,z integers $\geqslant 1$ Condone use of permutations for this mark
		B1	2 appropriate identified outcomes correct, allow unsimplified
		M1	Summing *their* values for 4 or 5 correct identified scenarios only (no repeats or additional scenarios), condone identification by unsimplified expressions
	[Total =] 248	**A1**	Note: Only dependent upon M marks
		4	
(c)	$8! \times 3! \times {}^5P_2$	**M1**	$8! \times m$, m an integer $\geqslant 1$ Accept $8 \times 7!$ for $8!$
		M1	$3! \times n$, n an integer > 1
		M1	$p \times {}^5P_2$, $p \times {}^5C_2 \times 2$, $p \times 20$, p an integer > 1 If extra terms present, maximum 2/3 M marks available
	4 838 400	**A1**	Exact value required
		4	