Question	Answer	Marks	Guidance
5(b)	20 160 Final answer	**2**	**M1** for $3\times {}^{8}P_{5}$ or $3\times8\times7\times6\times5\times4$ or $\frac{1}{3}\times {}^{9}P_{6}$ oe
5(c)	16 800 Final answer	**3**	**M1** for starts 7 then 5 or 6 or 8 or 9: 3360 **M1** for starts 8, 9: 13 440 OR **M2** *their***(b)** – 3360 or **M1** for starts 7 then 1 or 2 or 3 or 4: 3360
6	$3x+4=2x^2+8x+1$ oe	**M1**	Eliminates one unknown
	$2x^2+5x-3[=0]$ or $-2x^2-5x+3$ $[=0]$	**A1**	Writes in solvable form
	$(2x-1)(x+3)$ or $(-2x+1)(x+3)$ oe	**M1**	Uses quadratic formula or factorises *their* 3-term quadratic
	$\left(\frac{1}{2}, \frac{11}{2}\right)$ (−3, −5) oe	**A1**	
	Equation of *their* perpendicular bisector: $y-\frac{1}{4}=-\frac{1}{3}\left(x+\frac{5}{4}\right)$ or $y=-\frac{1}{3}x-\frac{1}{6}$ oe	**M3**	**FT** *their* midpoint and perpendicular gradient from correct use of *their*(0.5, 5.5) and *their* (−3, −5) **M1 FT** for midpoint: (−1.25, 0.25) or $\left(\frac{their0.5+their(-3)}{2}, \frac{their5.5+their(-5)}{2}\right)$ **M1 FT** for perpendicular gradient: $m_{\perp}=\frac{-1}{\frac{their(-5)-their5.5}{their(-3)-their0.5}}$ oe or $-\frac{1}{3}$ OR **M1 FT** for equating lengths $(x+3)^2+(y+5)^2=(x-0.5)^2+(y-5.5)^2$ **M1 FT** for expanding soi $x^2+y^2+6x+10y+34=$ $x^2+y^2-x-11y+30.5$

© Cambridge University Press & Assessment 2025

Question	Answer	Marks	Guidance
6	$2x + 6y + 1 = 0$ final answer	**A2**	**A1** for correct equation in a different form isw e.g. $y-\frac{1}{4}=-\frac{1}{3}\left(x+\frac{5}{4}\right)$ or $y=-\frac{1}{3}x-\frac{1}{6}$ or $\frac{y-0.25}{x+1.25}=-\frac{7}{21}$ or $x+3y+\frac{1}{2}=0$ or $2x + 6y = -1$ oe OR **A1 FT** *their* perpendicular bisector for a final answer in the form $ax + by + c = 0$ **Dep** on previous **M1 M1 and** an attempt to find the perpendicular bisector
7	$(1 + \tan^2 3x) + \tan 3x - 3 \ [=0]$	**M1**	Uses $\sec^2 3x = 1 + \tan^2 3x$
	$\tan^2 3x + \tan 3x - 2 \ [= 0]$	**A1**	Writes in solvable form
	$(\tan 3x + 2)(\tan 3x - 1) \ [= 0]$ $\tan 3x = -2, \ \tan 3x = 1$	**M1**	Factorises or solves their 3-term quadratic in $\tan 3x$
	Correct triple angle: $3x = 116.6$ or 296.6 or 45 or 225	**A1**	
	$[x =]$ 15, 75, 38.9 or 38.85[5…] 98.9 or 98.85[5…] and no extras in range $0 \leqslant x \leqslant 120$	**A2**	**A1** for any two correct angles, ignoring extras in range