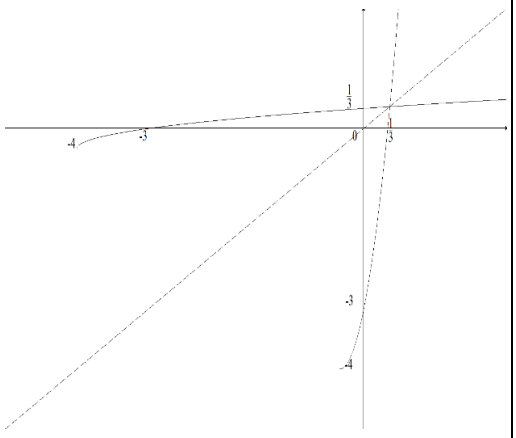
Question	Answer	Marks	Guidance
6(a)	$c=12$	**B1**	
	$\text{p}\left(\frac{1}{3}\right)$: $\frac{a}{27}+\frac{b}{9}+\frac{c}{3}-5=0$ soi	**M1**	Allow one arithmetic or sign error, may substitute in their *c*.
	$\text{p}(2)$: $8a+4b+2c-5=95$	**M1**	Allow one arithmetic or sign error, may substitute in their *c*.
	$a+3b=27$ or $\frac{a}{27}+\frac{b}{9}=1$ oe	**A1**	Allow multiples but *c* needs to have been eliminated and terms with powers evaluated.
	$2a+b=19$ oe	**A1**	Allow multiples but *c* needs to have been eliminated
	$a=6,\ b=7$	**2**	**M1**, **dep** on at least one previous **M1**, for attempt to solve *their* equations in *a* and *b* only, to find *a* or *b*. **A1** for both *a* and *b*.
6(b)	$(3x-1)(2x^2+3x+5)$ cao	**2**	**M1** for attempt at 2 terms in *their* quadratic factor. **A1** for both factors.
	For $2x^2+3x+5=0,$ discriminant is less than zero, so no solutions. [Only solution is $x=\frac{1}{3}$.]	**B1**	Allow other valid arguments, but must be using a correct quadratic factor and an attempt to evaluate the discriminant
7(a)(i)	136 080	**B1**	
7(a)(ii)	(End in 0) 15 120 or ${}^{9}\text{P}_{5}$ or $9\times8\times7\times6\times5$	**B1**	
	(End in 5) 13 440 or $8\times{}^{8}\text{P}_{4}$ or $8\times8\times7\times6\times5$	**B1**	
	Total: 28 560	**B1**	
	Alternative 1		
	(Does not start with 5:) 26 880 or $16\times{}^{8}\text{P}_{4}$	**(B1)**	
	(Starts with 5:) 1680 or ${}^{8}\text{P}_{4}$	**(B1)**	
	Total: 28 560	**(B1)**	

Question	Answer	Marks	Guidance
7(a)(ii)	**Alternative 2**		
	(Number not divisible by 5:) 107 520 or $8\times8\times{}^{8}\mathrm{P}_{4}$	**(B1)**	
	136 080 – 107 520	**(B1)**	**FT** on *their* 136 080
	Total: 28 560	**(B1)**	
7(b)(i)	346 104	**B1**	
7(b)(ii)	18	**B1**	Do not isw subsequent work
7(b)(iii)	the number of committees with no dentists: 11 440	**M1**	Allow attempts at 7 options, but must have all of them: 8, 448, 6720, 39 200, 101 920, 122 304 and 64 064
	334 664	**A1**	May come from ${}^{24}\mathrm{C}_{7}-{}^{16}\mathrm{C}_{7}$
8(a)(i)	$a=-\frac{1}{3}$ or $x\geqslant-\frac{1}{3}$	**B1**	Allow -0.333 or better Allow a correct recurring decimal
8(a)(ii)	$\mathrm{f}\geqslant-4$	**B1**	
8(a)(iii)		**4**	**B1** for $y=\mathrm{f}(x)$, must have a correct shape (right hand side from the vertex of a quadratic curve), must be a 1:1 function, intersecting each of the *x* and *y* axes once, in quadrants 1, 3 and 4. **B1**, **dependent** on previous **B** for passing through $(0,-3)$ and $\left(\frac{1}{3},\ 0\right)$. **B1 dependent** on first **B1** for $y=\mathrm{f}^{-1}(x)$, being a correct reflection of *their* $y=\mathrm{f}(x)$, intersecting each of the *x* and *y* axes and $y=\mathrm{f}(x)$ once. **B1 dependent** on previous **B** for passing through $(-3,\ 0)$ and $\left(0,\ \frac{1}{3}\right)$.
8(b)	$3\left(\ln\left(2x^{2}+5\right)\right)-2(=4)$	**M1**	For correct order
	$x=\sqrt{\frac{\mathrm{e}^{2}-5}{2}}$ or exact equivalent	**2**	**M1 dep** for a correct attempt to deal with logarithms and obtain *x* = … Allow one arithmetic or sign slip.