Q	Marking instructions	AO	Marks	Typical solution
10(a)	Substitutes $x = 2$ into $f(x)$ and equates to 0	1.1a	M1	$(2)^3 - 2a(2)^2 + 28(2) + 4b = 0$ $8 - 8a + 56 + 4b = 0$
	Completes a reasoned argument to obtain $2a - b = 16$ Must see evaluation of terms before dividing. AG	2.1	R1	$8a - 4b = 64$ $2a - b = 16$
	Subtotal		**2**	

Q	Marking instructions	AO	Marks	Typical solution
10(b)(i)	Substitutes $x = 2$ into $g(x)$ and equates to 0	1.1a	M1	$2(2)^3 - a(2)^2 - 4(2) - 2b = 0$ $16 - 4a - 8 - 2b = 0$
	Solves their linear simultaneous equations to obtain values for a and b	1.1a	M1	$4a + 2b = 8$ $2a - b = 16$
	Obtains $a = 5$ and $b = -6$	1.1b	A1	$a = 5,\ b = -6$
	Subtotal		**3**	

Q	Marking instructions	AO	Marks	Typical solution
10(b)(ii)	Substitutes their a and b correctly into $f(x)$ and $g(x)$	1.1a	M1	$x^3 - 10x^2 + 28x - 24 = 2x^3 - 5x^2 - 4x + 12$ $x^3 + 5x^2 - 32x + 36 = 0$ $(x-2)(x^2 + 7x - 18) = 0$ $(x-2)(x-2)(x+9) = 0$ $x = 2$ and $x = -9$ $\therefore$ exactly two distinct solutions because $x = 2$ is a repeated root
	Factorises $f(x) - g(x)$ as $(x - 2)$(quadratic) or Factorises $f(x)$ as $(x - 2)$(quadratic) and $g(x)$ as $(x - 2)$(quadratic)	3.1a	M1	
	Obtains $(x - 2)(x - 2)(x + 9) = 0$ or $(x - 2)(x - 2)(x - 6) =$ $(x - 2)(x - 2)(2x + 3)$	1.1b	A1	
	Obtains $x = -9$ or $(x + 9)$	1.1b	B1	
	Completes a reasoned argument to show there are exactly two distinct solutions CSO	2.1	R1	
	Subtotal		**5**	

	Question 10 Total		**10**	