Question Number	Scheme	Marks
8(a)	$y = 3x + "c"$ or $y = "m"x - 12'$	M1
	$y = 3x - 12$	A1
		(2)
(b)	$k = 10$	B1
		(1)
(c)	E.g. $y = A(x-4)(x-10)$ or $y = C(x-7)^2 - 18$	M1
	E.g. $-18 = A(7-4)(7-10) \Rightarrow A = ...$ Or $0 = C(4-7)^2 - 18 \Rightarrow C = ...$	dM1
	$y = 2(x-4)(x-10)$, $y = 2(x-7)^2 - 18$ o.e.	A1
		(3)
(d)	Two of $y > 3x - 12$, $y < 2(x-4)(x-10)$, $x > 0$, $x < 4$	M1
	E.g. $3x - 12 < y < 2(x-4)(x-10)$, $0 < x < 4$	A1
		(2)
		(8 marks)

(a)

M1: Attempts form $y = mx + c$ with m or c correct. May be implied by e.g. $m = 3$ (or $\frac{12}{4}$) or $c = -12$

A1: $y = 3x - 12$. A full correct equation is required including "$y =$". Condone $\frac{12}{4}$ for 3.

(b)

B1: $k = 10$. Condone $x = 10$ and condone (10, 0)

(c)

M1: Attempts an equation of the form $(y =) A(x-4)(x-"10")$ or $(y =) C(x-7)^2 - 18$

Condone with A, $C = 1$ or any other constant.

It is possible they could try with an attempt to use all three coordinates.

The "y =" is not needed unless the equation is attempted as e.g. $y + 18 = C(x-7)^2$

dM1: Full attempt at equation with an attempt at finding A or C. **Depends on the first mark.**

E.g. $y = A(x-4)(x-"10")$ and uses $x = 7$, $y = -18$ to find A or $y = C(x-7)^2 - 18$ and uses $x = 4$ or $x =$ "10" when $y = 0$ to find C

A1: $(y =) 2(x-4)(x-10)$, $(y =) 2(x-7)^2 - 18$ o.e. e.g. $(y =) 2(x-7)^2 - 18$

The "$y =$" is **not** required here, just look for a correct expression.

(d)

M1: Two of $y > 3x - 12$, $y < 2(x-4)(x-10)$, $x > 0$, $x < 4$ Accept with $\leqslant \leftrightarrow <$ and $\geqslant \leftrightarrow >$

Follow through their answers to part (a) and part (c) provided (a) is linear and (c) is quadratic.

Do not allow e.g. $R > 3x - 12$, $R < 2(x-4)(x-10)$ etc. but allow f(x) for y.

A1: Fully defines region correctly (**not ft here**).

E.g. $3x-12<y<2(x-4)(x-10),\quad 0<x<4\left(\text{or } x>0, x<4\right)$

Or e.g. $y>3x-12,\ y<2(x-4)(x-10),\ x>0\ ,\ x<4$

The right hand side of the inequality $0<x<4$ may be larger. Accept $0<x<p$ as long as $4\leqslant p\leqslant\frac{23}{2}$

Allow **consistent** use of $>\leftrightarrow\geqslant$ for all of their inequalities.

Question Number	Scheme	Marks
9(a)	π	B1
		(1)
(b)(i)	3	B1
		(1)
(ii)	5	B1
		(1)
(iii)	201	B1
		(1)
		(4 marks)

(a)

B1: Period is π (radians) but condone $180°$ or just 180

(b)(i)

B1: 3

(ii)

B1: 5

(iii)

B1: 201