WMA11 October 2020 Mark Scheme

Question	Scheme	Marks
1	$a = 162$	B1
	$b = 5$	B1
	$c = 12$	B1
		(3 marks)

Notes

Make sure you mark in this order on epen.

B1 $a = 162$

B1 $b = 5$ condone $p = 5$

B1 $c = 12$ condone $q = 12$

Note: The values may be implied by their expression. If there is a contradiction between what appears to be their final expression and values for a, b or c which are incorrectly stated afterwards then treat this as isw.

Question	Scheme	Marks
2(a)	$b = 2$	B1
	$...\pm...(x\pm3)^2$	M1
	$\left(\mathrm{f}(x)=\right)\ 21-2(x-3)^2$	A1
		(3)
(b)	R is $(0,-4)$ or "h" $= 4$	B1
	$\mathrm{f}(x)-7=14-2(x-3)^2 \Rightarrow x=...$ or $\mathrm{f}(x)-7=-4+12x-2x^2 \Rightarrow x=...$ $\left(\text{NB } x=3\pm\sqrt{7}\right)$	M1
	$\text{Area}=\frac{1}{2}\times\left("3+\sqrt{7}"-\left("3-\sqrt{7}"\right)\right)\times"4"$	dM1
	$=4\sqrt{7}$	A1
		(4)
		(7 marks)

Notes

(a)

B1 $b = 2$ implied from their expression or stated. Eg look for $-2(x\pm...)^2$
Beware of expressions such as $21+2(x-3)^2$ which would be B0

M1 Sight of $(x\pm3)^2$

A1 $21-2(x-3)^2$. Condone $21-2(x+-3)^2$ or they may state the values for *a,b* and *c*. If there is a contradiction between what appears to be their final expression and values for *a*, *b* or *c* which are incorrectly stated afterwards then treat this as isw.

(b)

B1 R is $(0,-4)$ or "h" $= 4$ (The coordinate may be seen on a diagram as a point of their triangle or quadratic so allow just -4 rather than the full coordinate to be indicted on the *y*-axis). It may also be implied by their working.

M1 Attempts to solve $\mathrm{f}(x)-7=0$
Score for an attempt to solve a 3TQ of the form:
$-2x^2+12x+C=0$ where $C\neq3$ or $A-2(x-3)^2=0$ where $A\neq21$
or if they use their part (a) $"a"-"b"(x+"c")^2=0\Rightarrow d-"b"(x+"c")^2=0$ where $d\neq a$