Question	Scheme	Marks	AOs
11(a)	$x = -4$ **or** $y = -5$	B1	1.1b

	$P(-4,-5)$	B1	2.2a
		(2)	
(b)	$3x+40=-2(x+4)-5 \Rightarrow x=...$	M1	1.1b
	$x=-10.6$	A1	2.1
		(2)	
(c)	$a>2$	B1	2.2a
	$y=ax \Rightarrow -5=-4a \Rightarrow a=\frac{5}{4}$	M1	3.1a
	$\{a:a\leqslant 1.25\}\cup\{a:a>2\}$	A1	2.5
		(3)	
			(7 marks)

Notes:

(a)

B1: One correct coordinate. Either $x = -4$ or $y = -5$ or $(-4, \ldots)$ or $(\ldots,-5)$ seen.

B1: Deduces that $P(-4,-5)$ Accept written separately e.g. $x = -4$, $y = -5$

(b)

M1: Attempts to solve $3x+40=-2(x+4)-5 \Rightarrow x=...$ Must reach a value for x.

You may see the attempt crossed out but you can still take this as an attempt to solve the required equation.

A1: $x = -10.6$ oe e.g. $-\frac{53}{5}$ only. If other values are given, e.g. $x = -37$ they must be rejected or the $-\frac{53}{5}$ clearly chosen as their answer. Ignore any attempts to find y.

Alternative by squaring:

$$3x+40=2|x+4|-5 \Rightarrow 3x+45=2|x+4| \Rightarrow 9x^2+270x+2025=4\left(x^2+8x+16\right)$$

$$\Rightarrow 5x^2+238x+1961=0 \Rightarrow x=-37,-\frac{53}{5}$$

M1 for isolating the $|x+4|$, squaring both sides and solving the resulting quadratic

A1 for selecting the $-\frac{53}{5}$

Correct answer with no working scores both marks.

(c)

B1: Deduces that $a > 2$

M1: Attempts to find a value for a using their $P(-4,-5)$

Alternatively attempts to solve $ax = 2(x + 4) – 5$ and $ax = 2(x + 4) – 5$ to obtain a value for a.

A1: Correct range in acceptable set notation.

$\{a:a\leqslant 1.25\}\cup\{a:a>2\}$

$\{a:a\leqslant 1.25\}, \{a:a>2\}$

Examples: $\{a:a\leqslant 1.25 \text{ or } a>2\}$

$\{a:a\leqslant 1.25,\ a>2\}$

$(-\infty,1.25]\cup(2,\infty)$

$(-\infty,1.25], (2,\infty)$