Question Number	Scheme	Marks
5	$(x+2y=17)\quad x=\dfrac{36}{y}\quad \left(\text{or } y=\dfrac{36}{x}\right)$	M1
	$\dfrac{36}{y}+2y=17,\quad 36+2y^2=17y\quad (\text{or } 72+x^2=17x)$	M1
	$2y^2-17y+36\ (=0)\qquad (\text{or } x^2-17x+72=0)$	A1
	$(y-4)(2y-9)=0\qquad (\text{or } (x-8)(x-9))$	
	$y=4\quad x=9$	dM1A1
	$y=4\dfrac{1}{2}\quad x=8$	A1 (6)
M1 M1 A1 M1 A1 A1	Rearrange $xy = 36$ to $x = ...$ or $y = ...$ Eliminate x or y from the linear equation and obtain a 3TQ, $=0$ not needed Correct 3TQ, terms in any order. $=0$ not needed Solve their 3TQ by any valid method. Obtain at least one value for y or x **Either** 2 correct values for x or y **or** a correct (x, y) pair Both pairs correct and pairing clear.	
ALT:	The following method may possibly be seen: $xy + x + 2y = 53 \Rightarrow 36 + x + 2y = 53 \Rightarrow x + 2y = 17$ and $xy = 36$ or $x \times 2y = 72$	M1
	Hence x and $2y$ are the roots of the equation $z^2 - 17z + 72 = 0$	M1A1
	$(z - 9)(z - 8) = 0 \Rightarrow z = 9$ or 8	M1
	So $x = 8$ $y = 4.5$ or $x = 9$ $y = 4$	A1A1 [6]
M1 M1 A1 M1 A1 A1	Substitute $xy = 36$ in the linear equation to obtain $x + 2y = 17$ and $xy = 36$ oe Obtain a 3TQ with roots x and $2y$ Correct 3TQ Solve their 3TQ by any valid method. Obtain at least one value for *for the roots* **Either** 2 correct values for x or y **or** a correct (x, y) pair Both pairs correct and pairing clear.	
	Special Case $x+2y=17\quad xy=36$ Use $xy=36$ in the other equation to obtain $x+2y=17$ $\Rightarrow x=9\quad y=4$ By inspection: Score M1M0A0M1A1A0 (Must see $x+2y=17$; otherwise no marks) If the second answer is also obtained correctly by inspection, award all marks	