

Q	Marking instructions	AO	Marks	Typical solution
10(a)	Obtains $a^2 - 2ab + b^2$	1.1b	B1	$a^2 - 2ab + b^2$
	<b>Subtotal</b>		<b>1</b>	

Q	Marking instructions	AO	Marks	Typical solution
10(b)	Forms a different sum of a non-zero rational and its reciprocal.	1.1a	M1	$-2 + \frac{1}{-2} = -\frac{5}{2}$
	Finds a correct counter example <b>and</b> compares the result with 2  Must have used 1 or a negative value.	2.3	R1	$-\frac{5}{2} < 2$
	<b>Subtotal</b>		<b>2</b>	

Q	Marking instructions	AO	Marks	Typical solution
10(c)	Forms the inequality $\frac{a}{b} + \frac{b}{a} \leq 2$ (for a pair of distinct positive integers $a$ and $b$ ) Condone $\frac{a}{b} + \frac{b}{a} < 2$	2.1	M1	Assume $\frac{a}{b} + \frac{b}{a} \leq 2$ $\frac{a^2 + b^2}{ab} \leq 2$
	Rearranges and factorises to deduce $(a - b)^2 \leq 0$ Condone $(a - b)^2 < 0$	2.2a	A1	$a^2 + b^2 \leq 2ab$ $a^2 - 2ab + b^2 \leq 0$ $(a - b)^2 \leq 0$
	Completes a reasoned argument to explain the contradiction.  Must have started with $\frac{a}{b} + \frac{b}{a} \leq 2$ and stated $a \neq b$ or makes reference to them being distinct.	2.1	R1	Since $a \neq b$ this is a contradiction because $(a - b)^2 > 0$  Hence $\frac{a}{b} + \frac{b}{a} > 2$
	<b>Subtotal</b>		<b>3</b>	

	<b>Question 10 Total</b>		<b>6</b>	
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