Q	Marking Instructions	AO	Marks	Typical Solution
16(a)	Identifies zero as number for which student's argument is not true	AO1.2	B1	0
(b)	Uses 'proof by contradiction' Must see commencement of argument including stated assumption and at least two lines of argument	AO2.1	M1	Let a be irrational, and b be a non-zero rational, so $b = \frac{c}{d}$, where $c, d \in \mathbb{Z};\ c, d \neq 0$ Assume ab is rational, so $ab = \frac{p}{q}$, where $p, q \in \mathbb{Z};\ q \neq 0$ $\therefore \frac{ac}{d} = \frac{p}{q}$ $\therefore a = \frac{pd}{qc}$ so a is rational, which is a contradiction Hence ab must be irrational
	Represents product of rational and irrational numbers in symbolic form	AO2.5	M1	
	Correctly deduces that the product must be irrational	AO2.2a	A1	
	Completes a rigorous mathematical argument, proving that a non-zero rational multiplied by an irrational is irrational Must start with initial assumptions and prove the result convincingly Must define $p\ q\ c\ d$ as integers	AO2.1	R1	
	Total		**5**	