

Question			Answer	Mark	AO	Guidance
14	(a)		$P(\text{has disease} \mid \text{positive result})$ $= \frac{P(\text{has disease} \ \& \ \text{positive result})}{P(\text{positive result})}$	M1	3.4	Attempting this calculation, allow wrong values but for this mark must be a fraction with a product in the numerator and a sum of two products in the denominator.
			$= \frac{0.35 \times 0.95}{0.35 \times 0.95 + 0.65 \times 0.1}$	A1	1.1	Fully correct expression
			$= 0.836 \text{ (3 sf)}$	A1 [3]	1.1	Or 133/159 or 0.8365 (4sf) (0.836477...)
14	(b)		(Let proportion having the disease = p)	M1	1.1	Setting up an expression in this form using the given values
			$p \times 0.95 + (1 - p) \times 0.1$	M1	3.4	Setting their expression =0.43 and attempting to solve
			$p \times 0.95 + (1 - p) \times 0.1 = 0.43$	A1	1.1	cao (watch for 0.389 from incorrect working)
			$0.85p = 0.33$			
			$p = 0.388$			
			About 39% of trees (in county B) have the disease	B1FT [4]	3.2a	“Around 38.8 or 39 or 40” (oe e.g. 2/5). Must be in context and include "about" or "approximately" or "roughly" oe