(T) (a)
$$(\sin x - \cos x)^2$$
 (b)
$$\int (\sin x - \cos x)^2 dx$$

$$= \sin^2 x - 2\sin x \cos x + \cos^2 x$$

$$= \int (1 - \sin 2x) dx$$

$$= \sin^2 x + \cos^2 x - 2\sin x \cos x$$

$$= x + \frac{1}{2}\cos^2 x + \cos^2 x$$

= 1 - $\sin 2x$

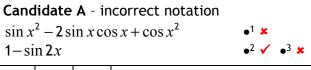
= x + \(\frac{1}{2} \cos 2x + C

Question			Generic scheme	Illustrative scheme	Max mark
17.	(a)		•¹ expand brackets	$ \bullet^{1} \sin^{2} x - \sin x \cos x -\sin x \cos x + \cos^{2} x $	3
			•² use double angle formula for sin	$\bullet^2 \ldots -\sin 2x \ldots$	
N. d			• use trigonometric identity and express in required form	\bullet ³ $1-\sin 2x$	

Notes:

1. For correct answer with no working award 0/3.

Commonly Observed Responses:



(b)	•4 link to (a) and integrate one term	•4 eg $\int (1-\sin 2x) dx = x$	2
	• ⁵ complete integration	$\bullet^5 x + \frac{1}{2}\cos 2x + c$	

Notes:

- 2. •4 and •5 can only be awarded if the integrand is of the form $p + q \sin rx$.
- 3. Where the statement for \bullet^3 appears with no relevant working, \bullet^4 and \bullet^5 are not available.

Commonly Observed Responses:

[END OF MARKING INSTRUCTIONS]