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**(i)** Show that the equation  $\cos 2x(\tan^2 2x + 3) + 3 = 0$  can be expressed as

$$2 \cos^2 2x + 3 \cos 2x + 1 = 0.$$

[3]

[illegible]

(ii) Hence solve the equation  $\cos 2x(\tan^2 2x + 3) + 3 = 0$  for  $0^\circ \leq x \leq 180^\circ$ . [4]

[4]