

12.**In this question you must show all stages of your working.****Solutions relying entirely on calculator technology are not acceptable.**

(a) Show that the equation

$$3 \sin \theta \tan \theta = 4$$

can be written as

$$3 \cos^2 \theta + 4 \cos \theta - 3 = 0$$

(3)(b) Hence solve, for $0 < x < 180^\circ$, $x \neq 45^\circ$, $x \neq 135^\circ$

$$3 \sin 2x \tan 2x = 4$$

giving your answers to one decimal place.

(4)