

AQA – Trigonometry – AS Mathematics P1

1. June/2021/Paper_7356/1/No.8

(a) (i) Show that the equation

$$3 \sin \theta \tan \theta = 5 \cos \theta - 2$$

is equivalent to the equation

$$(4 \cos \theta - 3)(2 \cos \theta + 1) = 0$$

[3 marks]

(a) (ii) Solve the equation

$$3 \sin \theta \tan \theta = 5 \cos \theta - 2$$

for $-180^\circ \leq \theta \leq 180^\circ$ **[2 marks]**

(b) Hence, deduce all the solutions of the equation

$$3 \sin \left(\frac{1}{2} \theta \right) \tan \left(\frac{1}{2} \theta \right) = 5 \cos \left(\frac{1}{2} \theta \right) - 2$$

for $-180^\circ \leq \theta \leq 180^\circ$, giving your answers to the nearest degree.**[2 marks]**