Marked example 1

Paper 1 style · No calculator

1 6 marks AHL 3.10 · 3.11 ●●○ Typical

The angles A and B are acute, with $\tan A = 2$ and $\tan B = 3$.

(a) Find the value of $\tan(A + B)$. **[2]**

(b) Hence find the exact value of $A + B$. **[2]**

(c) Find the value of $\tan 2A$. **[2]**

MARKSCHEME (a)

$\dfrac{2+3}{1-2\times 3}$ **M1**

$\tan(A+B) = -1$ **A1**

Total 2 marks

MARKSCHEME (b)

$0 < A + B < \pi$ and $\tan(A+B) < 0$, so $A + B$ is obtuse **R1**

$A + B = \dfrac{3\pi}{4}$ **A1**

Total 2 marks

MARKSCHEME (c)

$\dfrac{2\times 2}{1-2^2}$ **M1**

$\tan 2A = -\dfrac{4}{3}$ **A1**

Total 2 marks

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