Higher Maths
SQA 2021 Paper 2
Question 10

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(a) Show that $2\tan x\cos^2 x = \sin 2x$, where $-\frac{\pi}{2} < x < \frac{\pi}{2}$. **2**

(b) Given that

- $\frac{dy}{dx} = 6\tan x\cos^2 x$, and
- $y = 3$ when $x = 0$,

express y in terms of x. **4**

Answers:

(a) Substitute for tan x and simplify.

(b) $y = -\frac{3}{2}\cos 2x + \frac{9}{2}$