1. Given that

$$y = 3x \arcsin 2x \qquad 0 \leqslant x \leqslant \frac{1}{2}$$

(a) determine an expression for $\frac{dy}{dx}$

(2)

(b) Hence determine the exact value of $\frac{dy}{dx}$ when $x = \frac{1}{4}$, giving your answer in the form $a\pi + b$ where a and b are fully simplified constants to be found.

(1)

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Question 1 continued

(Total for Question 1 is 3 marks)

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