Marked example 1

Paper 1 style · No calculator

1 6 marks SL 3.7

●○○ Routine

Let $f(x) = 3\sin(2x) + 1$, for $0 \leq x \leq \pi$.

(a) Write down the amplitude of f. [1]

(b) Find the period of f. [1]

(c) Write down the range of f. [2]

(d) Find the coordinates of the maximum point of the graph of f. [2]

MARKSCHEME (a)

3

A1

Total 1 mark

MARKSCHEME (b)

$\frac{2\pi}{2} = \pi$

A1

Total 1 mark

MARKSCHEME (c)

$-2 \leq f(x) \leq 4$

A1A1

Total 2 marks

Note A1 for each end point; the inequality, not just two numbers.

MARKSCHEME (d)

$2x = \frac{\pi}{2},\ x = \frac{\pi}{4}$

$\left(\frac{\pi}{4}, 4\right)$

A1

A1

Total 2 marks

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