

Higher Maths
SQA 2018 Paper 2
Question 6



Functions, f and g , are given by $f(x) = 3 + \cos x$ and $g(x) = 2x$, $x \in \mathbb{R}$.

(a) Find expressions for

(i) $f(g(x))$ and

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(ii) $g(f(x))$.

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(b) Determine the value(s) of x for which $f(g(x)) = g(f(x))$ where $0 \leq x < 2\pi$.

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Answers:

(a) (i) $3 + \cos 2x$

(ii) $2(3 + \cos x)$

(b) $x = \pi$