Marked example 1

Paper 1 style · No calculator

1 6 marks SL 2.5

●○○ Routine

Let $f(x) = x + 2$ and $g(x) = 3x^2$.

(a) Find $(g \circ f)(x)$. **[2]**

(b) Find $(f \circ g)(-1)$. **[2]**

(c) Solve $(g \circ f)(x) = 12$. **[2]**

MARKSCHEME (a)

$g(x+2)$ **(M1)**

$3(x+2)^2$ **A1**

Total 2 marks

Note Accept $3x^2 + 12x + 12$.

MARKSCHEME (b)

$g(-1) = 3$ **(A1)**

$f(3) = 5$ **A1**

Total 2 marks

MARKSCHEME (c)

$(x+2)^2 = 4$ **(M1)**

$x = 0$ or $x = -4$ **A1**

Total 2 marks

Note Both values are needed for the A1.

Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software.
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