



Air maths tuition

Interact, engage and perform

Combining functions: Introduction

$f(x) = 3x - 1$, $g(x) = x^2 + 1$
find i) $fg(x)$ ii) $gf(x)$

i) $fg(x) = f(x^2 + 1)$
 $= 3(x^2 + 1) - 1$
 $= 3x^2 + 2$

ii) $gf(x) = g(3x - 1)$
 $= (3x - 1)^2 + 1$
 $= 9x^2 - 6x + 2$

$x \rightarrow g(x) \rightarrow f(g(x))$
 $2 \rightarrow 5 \rightarrow 14$
 $fg(2) = 3(2)^2 + 2$
 $= 14 \quad \checkmark$

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