

FUNCTIONS

Exercise 8.5

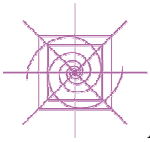
a) Let $f(x) = 2x + 3$ and $g(x) = 2x + 12$, find the following:

i) $fg(x)$

ii) $f^{-1}g(x)$

iii) $gf(2)$

iv) $g^{-1}f^{-1}(x)$



b) Given that $f : x \mapsto 2x + 1$ and $g : x \mapsto 3x^2$, express fg and gf in a similar form.

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c) The function $f : x \mapsto \frac{1}{3+x}$, find when $x = 3$ and $-\frac{10}{3}$, the following:

i) $f^{-1}(x)$

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ii) $ff(x)$

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_____	_____
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d) The functions p and q are defined as $p : x \mapsto 3x + 2$ and $q : x \mapsto x^2 - 1$.

Evaluate

i) $pq(2)$

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ii) $p^{-1}q(3)$

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iii) Solve the equation $p(x) = 11$

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iv) Solve the equation $q(x) = 8$.

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