Inverse Functions (A)
ANSWERS

Section A

Find the inverse of each function.

Functions	Solution
1) $f(x) = x + 4$	$f^{-1}(x) = x - 4$
2) $f(x) = 6x - 2$	$f^{-1}(x) = \frac{x + 2}{6}$
3) $f(x) = \frac{x}{8}$	$f^{-1}(x) = 8x$
4) $f(x) = \frac{x}{2} - 7$	$f^{-1}(x) = 2x + 14$
5) $f(x) = \frac{11 - 5x}{4} - 12$	$f^{-1}(x) = \frac{-37 - 4x}{5}$
6) $f(x) = x^2 - 10$	$f^{-1}(x) = \sqrt{x + 10}$
7) $f(x) = \frac{2x^2 + 9}{15}$	$f^{-1}(x) = \sqrt{\frac{15x - 9}{2}}$
8) $f(x) = \sqrt{4x + 13}$	$f^{-1}(x) = \frac{x^2 - 13}{4}$

Section B

1) Let $f(x) = 2x^3 - 16$. Solve the equation $f^{-1}(x) = 3$. $x = 38$

2) When $f(x) = x^2 + 4x + 3$, $x > 0$, find $f^{-1}(x)$. $f^{-1}(x) = \sqrt{x + 1} - 2$

3) Let $f(x) = \frac{2 + 3x}{x - 2}$ and $g(x) = x^2$

a) Find the inverse of $f(x)$ $f^{-1}(x) = \frac{2 + 2x}{x - 3}$

b) Find the value of $f^{-1}g(-2)$ 7

Extension

$f(x) = \frac{1}{3}(2x - 5)$, $g(x) = \frac{4}{2 - x}$, solve the equation $f^{-1}(x) = g(x)$

$x = -\frac{2}{3}$ $x = 1$