Calculus Worksheet: Questions on Differentiation of Inverse Functions (2)

Question 1:
If \( f(0) = -3 \) and \( f'(0) = 6 \), find \( (f^{-1})'(-3) \).

Question 2:
\( f \) is a function given by

\[
f(x) = \sin(x) + x, \quad -\frac{\pi}{2} \leq x \leq \frac{\pi}{2}
\]

1. Show that \( f \) is a one to one function
2. Find \( (f^{-1})'(0) \)

Question 3:
Let \( (f^{-1})'(x) = 2x, \quad x \geq 0 \) and \( f'(2) = 3 \), find \( f'(x) \).

More examples at

www.analyzemath.com/calculus/Differentiation/inverse_trigonometric.html