Name: _____

Inverse of Functions

1) If $f(x) = x + 3$ and $g(x) = x - 3$, then evaluate

i) $(f \circ g)(x)$ = _____ ii) $(g \circ f)(x)$ = _____

iii) Are the functions $f(x)$ and $g(x)$ inverses? _____

2) If $f(x) = \frac{4x - 1}{2}$ and $g(x) = \frac{x + 1}{4}$, then evaluate

i) $(f \circ g)(x)$ = _____ ii) $(g \circ f)(x)$ = _____

iii) Are the functions $f(x)$ and $g(x)$ inverses? _____

3) Determine algebraically whether $f(x) = 6 \log_e x$ and $g(x) = e^{\frac{x}{6}}$ are inverses of each other.

4) Determine algebraically whether $f(x) = -8x^3 + 7$ and $g(x) = \sqrt[3]{7 - x}$ are inverses of each other.