ALGEBRA 2 · CLASSWORK · SPECIAL ED

Use Composition to Verify Inverse Functions

SCORE / 25

01 Part A · Practice

f and *g* are inverse functions exactly when $f(g(x)) = x$ and $g(f(x)) = x$ for every x in their domains.

EXAMPLE

Verify $f(x) = 2x + 3$ **and** $g(x) = \frac{x - 3}{2}$**.**

1. $f(g(x)) = 2 \cdot \frac{x - 3}{2} + 3 = x.$
2. $g(f(x)) = \frac{2x + 3 - 3}{2} = x.$
3. Both give x: inverses.

WORDS TO KNOW

composition	f(g(x))
identity	x → x: what inverse compositions give
verify	show it is true

1 ●○○ Find k so that $g(x) = \frac{x - k}{3}$ is the inverse of $f(x) = 3x - 6$.

HINT Compute f(g(x)) and make it equal x.

2 ●○○ Show that $f(x) = 3x - 6$ and $g(x) = \frac{x + 6}{3}$ are inverses by finding $f(g(x))$ and $g(f(x))$.

HINT Substitute each function into the other and simplify.

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Preview - the full worksheet and its answer key are at primeworksheet.com