Name: _____

Composition of Two Functions

L2S1

A) If $f(x) = \frac{1}{4x+1}$, $g(x) = 9x - 3$ and $h(x) = \frac{1}{x}$, find the following.

1) $g(h(x))$

2) $h(f(x))$

B) If $f(x) = 5^x$, $g(x) = 13 - 10x$ and $h(x) = \log_5 x$, find the following.

1) $(f \circ h)(x)$

C) If $g(x) = x^2 - 2x + 15$ a

1) $(g \circ h)(x)$

3) Is $(g \circ h)(x) \neq (h \circ$

D) 1) If $g(x) = 3x^4 + x^3 + x + 12$ and $h(x) = x - 14$, which of the following represents $h(g(x))$?

i) $3x^4 + x^3 + x - 2$ ii) $3x^4 + x^3 + x - 26$ iii) $-3x^4 - x^3 - x + 2$ iv) $3x^4 - x^3 - x + 26$

2) If $f(x) = x^2 - x$ and $g(x) = x + 2$, which of the following represents $(g \circ f)(x)$?

i) $x^2 - 2$ ii) $x^2 + x + 2$ iii) $x^2 + 2$ iv) $x^2 - x + 2$

Name: _____ **Answer key**

Composition of Two Functions

L2S1

A) If $f(x) = \frac{1}{4x+1}$, $g(x) = 9x - 3$ and $h(x) = \frac{1}{x}$, find the following.

1) $g(h(x))$ — **$\frac{9}{x} - 3$**

2) $h(f(x))$ — **$4x + 1$**

B) If $f(x) = 5^x$, $g(x) = 13 - 10x$ and $h(x) = \log_5 x$, find the following.

1) $(f \circ h)(x)$ — **x**

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C) If $g(x) = x^2 - 2x + 15$ a

1) $(g \circ h)(x)$

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3) Is $(g \circ h)(x) \neq (h \circ$

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D) 1) If $g(x) = 3x^4 + x^3 + x + 12$ and $h(x) = x - 14$, which of the following represents $h(g(x))$?

i) ✓ $3x^4 + x^3 + x - 2$ ii) $3x^4 + x^3 + x - 26$ iii) $-3x^4 - x^3 - x + 2$ iv) $3x^4 - x^3 - x + 26$

2) If $f(x) = x^2 - x$ and $g(x) = x + 2$, which of the following represents $(g \circ f)(x)$?

i) $x^2 - 2$ ii) $x^2 + x + 2$ iii) $x^2 + 2$ iv) ✓ $x^2 - x + 2$