Name: _____

Composition of Three Functions

L1S1

A) If $f(x) = 5x^2 + 6$, $g(x) = 3x$ and $h(x) = x - 2$, find the following.

1) $f(g(h(x)))$

2) $g(h(f(x)))$

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B) If $f(x) = x - 10$, $g(x) = x^2 - 1$ and $h(x) = -9$, find the following.

1) $(h\ o\ g\ o\ f)(x)$

2) $(g\ o\ f\ o\ f)(x)$

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C) If $f(x) = 2x + 3$, $g(x) = x - 7$ and $h(x) = 5 - x$, find the following.

1) $(h\ o\ (f\ o\ g))(x)$

2) $((h\ o\ f)\ o\ g)(x)$

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3) Is $(h\ o\ (f\ o\ g))(x) = ((h\ o\ f)\ o\ g)(x)$?

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D) 1) If $f(x) = x + 1$, $g(x) = x^2 - 7$ and $h(x) = 5$, which of the following represents $f(g(h(x)))$?

i) $x^2 + 2x - 6$ ii) 19 iii) $x^2 - 6$ iv) -19

2) If $f(x) = 2x^2$, $g(x) = x^2 - 8$ and $h(x) = -4x$, which of the following represents $(g\ o\ h\ o\ f)(x)$?

i) $64x^4 + 8$ ii) $4x^4 - 15$ iii) $64x^4 - 8$ iv) $4x^4 + 15$