Name: _____

MS3

Evaluating Composition of Three Functions

A) If $f(x) = 9^{2x}$, $g(x) = 7x - 8$ and $h(x) = 3x$, evaluate the following.

1) $g\left(h\left(f\left(\frac{1}{4}\right)\right)\right)$

2) $h\left(g\left(f\left(-\frac{1}{2}\right)\right)\right)$

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B) If $f(x) = 4x^2 - 3$, $g(x) = -3$ and $h(x) = x - 15$, evaluate the following.

1) $(f\,o\,g\,o\,f)\left(-\frac{3}{7}\right)$

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C) If $f(x) = x^2 - x - 1$, $g(x$ owing.

1) $(h\,o\,(g\,o\,f))\left(-\frac{1}{3}\right)$

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3) Is $(h\,o\,(g\,o\,f))\left(-\frac{1}{3}\right)$

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D) 1) If $f(x) = 3x - 4$, $g(x) = 2x - 7x + 8$ and $h(x) = \sqrt{x} + 5$, which of the following represents $g\left(f\left(h\left(\frac{2}{3}\right)\right)\right)$?

i) 87 ii) −107 iii) −87 iv) 107

2) If $f(x) = 6 \log_e x$, $g(x) = e^{8x}$ and $h(x) = \frac{8}{x}$, which of the following represents $(h\,o\,f\,o\,g)\left(\frac{1}{2}\right)$?

i) $\frac{1}{3}$ ii) $-\frac{1}{3}$ iii) $\frac{2}{3}$ iv) $-\frac{2}{3}$