Name: _____

Composition of Three Functions

A) If $f(x) = 2x^5 - x^2 + 12$, $g(x) = -x$ and $h(x) = \frac{x}{2}$, find the following.

1) $h(g(h(-2b)))$

2) $f(h(g(4u)))$

B) If $f(x) = \log_e x$, $g(x) = e^{2x}$ and $h(x) = 3x^2$, find the following.

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

C) If $f(x) = 4$, $g(x) = -x -$

1) $(h\ o\ (g\ o\ f))\left(-\frac{2r}{4}\right)$

3) Is $(h\ o\ (g\ o\ f))\left(-\frac{2r}{4}\right)$

D) 1) If $f(x) = 10 + x$, $g(x) = 5x$ and $h(x) = 2x^2 + 5$, which of the following represents $(f\ o\ h\ o\ g)(-s^2)$?

i) $-50s^4 + 15$ ii) $50s^4 + 15$ iii) $-50s^4 - 15$ iv) $50s^4 - 15$

2) If $f(x) = x - 7$, $g(x) = x^3 - x^2$ and $h(x) = -6x$, which of the following represents $h(f(g(t)))$?

i) $-6t^3 - 6t^2 + 42$ ii) $6t^3 + 6t^2 + 42$ iii) $6t^3 + 6t^2 - 42$ iv) $-6t^3 + 6t^2 + 42$