

## Evaluating Composition of Three Functions

A) If  $f(x) = -2x - 15$ ,  $g(x) = -7$  and  $h(x) = x^2 + 4$ , evaluate the following.

1)  $f(g(f(4)))$

2)  $h(f(g(-20)))$

B) If  $f(x) = x^6 - 5x^3 - 20$ ,  $g(x) = -9x$  and  $h(x) = \frac{x-9}{3}$ , evaluate the following.

1)  $(g \circ f \circ h)(15)$

C) If  $f(x) = -2x^2 + 9x + 1$ , evaluate the following.

1)  $(f \circ (h \circ g))(-3)$

3)  $15(f \circ (h \circ g))(-3)$

D) 1) If  $f(x) = 16$ ,  $g(x) = e^x$  and  $h(x) = \log_4 x$  which of the following represents  $(g \circ h \circ f)(10)$ ?

i)  $-e^2$

ii)  $e^{16}$

iii)  $e^2$

iv)  $-e^{16}$

2) If  $f(x) = \frac{x^2 + 14}{x}$ ,  $g(x) = 18 - x^4$  and  $h(x) = \sqrt{2}$ , which of the following represents  $f(g(h(0)))$ ?

i)  $-14$

ii)  $14$

iii)  $-15$

iv)  $15$

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