

## Evaluating Composition of Three Functions

A) If  $f(x) = e^x$ ,  $g(x) = 8x$  and  $h(x) = x^3 + 3$ , evaluate the following.

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

2)  $g\left(h\left(f\left(\frac{1}{3}\right)\right)\right)$

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B) If  $f(x) = 5x + 2$ ,  $g(x) = x^2 - 1$  and  $h(x) = -2$ , evaluate the following.

1)  $(h \circ g \circ f)\left(\frac{2}{3}\right)$

2)  $(f \circ h \circ g)\left(\frac{1}{3}\right)$

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C) If  $f(x) = 3 \log_2 x$ ,  $g(x)$

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

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3) Is  $(f \circ (h \circ g))\left(\frac{1}{2}\right) =$

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D) 1) If  $f(x) = -9$ ,  $g(x) = \frac{1}{x+4}$  and  $h(x) = x + 8x$ , which of the following represents  $h\left(g\left(f\left(-\frac{3}{4}\right)\right)\right)$ ?

i) -7

ii) 16

iii) 10

iv) -9

2) If  $f(x) = 3\sqrt{x}$ ,  $g(x) = 2x - 7$  and  $h(x) = x + 6$ , which of the following represents  $(g \circ f \circ h)\left(\frac{1}{4}\right)$ ?

i) 11

ii) 8

iii) -13

iv) -8

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

2)  $g\left(h\left(f\left(\frac{1}{3}\right)\right)\right)$

$e^{23}$

$8e + 24$

B) If  $f(x) = 5x + 2$ ,  $g(x) = x^2 - 1$  and  $h(x) = -2$ , evaluate the following.

1)  $(h \circ g \circ f)\left(\frac{2}{3}\right)$

$-2$

$8$

C) If  $f(x) = 3 \log_2 x$ ,  $g(x)$

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

$6$

$6$

3) Is  $(f \circ (h \circ g))\left(\frac{1}{2}\right) =$

True

D) 1) If  $f(x) = -9$ ,  $g(x) = \frac{1}{x+4}$  and  $h(x) = x + 8x$ , which of the following represents  $h\left(g\left(f\left(-\frac{3}{4}\right)\right)\right)$ ?

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