

Name: \_\_\_\_\_

L2S2

## Composition of Two Functions

A) If  $f(x) = x + 1$ ,  $g(x) = \frac{1}{x - 1}$  and  $h(x) = 6^x + 1$ , find the following.

1)  $g(h(x))$

2)  $f(f(x))$

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B) If  $f(x) = x^3 + 4$ ,  $g(x) = 7$  and  $h(x) = \sqrt[3]{x - 6}$ , find the following.

1)  $(f \circ h)(x)$

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

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C) If  $f(x) = -x$  and  $h(x) =$

1)  $(h \circ f)(x)$

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3) Is  $(h \circ f)(x) = (f \circ$

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D) 1) If  $g(x) = 27$  and  $f(x) = \log_3 x$ , which of the following represents  $(f \circ g)(x)$ ?

i) 6

ii) 27

iii) 3

iv) 9

2) If  $f(x) = \frac{5}{(x - 2)^2}$  and  $g(x) = \sqrt{\frac{x}{5}}$ , which of the following represents  $g(f(x))$ ?

i)  $\frac{5}{x - 2}$

ii)  $\frac{1}{x - 2}$

iii)  $\frac{1}{\sqrt{x - 2}}$

iv)  $\frac{x}{\sqrt{x - 2}}$

## Composition of Two Functions

A) If  $f(x) = x + 1$ ,  $g(x) = \frac{1}{x-1}$  and  $h(x) = 6^x + 1$ , find the following.

1)  $g(h(x))$

2)  $f(f(x))$

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 $\frac{1}{6^x} \text{ or } 6^{-x}$

---

 $x + 2$

B) If  $f(x) = x^3 + 4$ ,  $g(x) = 7$  and  $h(x) = \sqrt[3]{x-6}$ , find the following.

1)  $(f \circ h)(x)$

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 $x - 2$

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C) If  $f(x) = -x$  and  $h(x) = -3x^2 - x$

1)  $(h \circ f)(x)$

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 $-3x^2 - x$

---

 $x - 10$

3) Is  $(h \circ f)(x) = (f \circ h)(x)$ ?

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 else

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