

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

## Function Operations

Mul/Div: MS3

A) 1) If  $f(x) = \frac{2}{5}x^3 + 4x$  and  $g(x) = 5x^2 - 10$ ,  
find  $(f \cdot g)(x)$ .

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2) If  $f(x) = 5$  and  $g(x) = \frac{5}{6}x^3 + 15$ ,  
find  $\left(\frac{g}{f}\right)(x)$ .

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B) If  $f(x) = x^2 - 8x$  and  $g(x) = \frac{1}{2}x$ ; find the following.

i)  $\frac{f(x)}{g(x)}$

ii)  $g(x) \cdot f(x)$

C) 1) If  $f(x) = 3$  and  $g(x) =$   
find  $\frac{g(-7)}{f(-7)}$ .

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and  $g(x) = 6x^3 + 2$ ,

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D) If  $f(x) = 8x^2$  and  $g(x) =$

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

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E) 1) Which of the following represents  $(g \cdot f)(x)$ , if  $f(x) = x^2 - 9x$  and  $g(x) = x + \frac{1}{9}$ ?

i)  $x^4 - 9x^2 + 9x$

ii)  $x^4 - 6x^3 + \frac{1}{9}$

iii)  $x^4 + 3x^2 + 3x$

iv)  $x^4 + \frac{1}{9}x^3 - 9x^2 - x$

2) Which of the following represents  $\frac{f(-8)}{g(-8)}$ , if  $f(x) = \frac{3}{4}x^2 - 8$  and  $g(x) = 5x$ ?

i) -1

ii) 1

iii) 4

iv) -4