Name : _____

Function Operations

Mul/Div: MS3

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

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

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 $g(x) =$ [illegible] $g(x) = 6x^3 + 2$, find $\frac{g(-7)}{f(-7)}$.

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

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

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