Name_____ Date_____

4.5 Practice B

**In Exercises 1 and 2, find $(f + g)(x)$ and $(f - g)(x)$ and state the domain
of each. Then evaluate $f + g$ and $f - g$ for the given value of x.**

1. $f(x) = \sqrt[3]{4x}$; $g(x) = -9\sqrt[3]{4x}$; $x = -2$

2. $f(x) = 3x - 5x^2 - x^3$; $g(x) = 6x^2 - 4x$; $x = -1$

In Exercises 3–5, find $(fg)(x)$ and $\left(\dfrac{f}{g}\right)(x)$ and state the domain of each.

Then evaluate fg and $\dfrac{f}{g}$ for the given value of x.

3. $f(x) = 3x^3$; $g(x) = \sqrt[3]{x^2}$; $x = -8$

4. $f(x) = 3x^2$; $g(x) = 5x^{1/4}$; $x = 16$

5. $f(x) = 10x^{5/6}$; $g(x) = 2x^{1/3}$; $x = 64$

In Exercises 6 and 7, use a graphing calculator to evaluate $(f + g)(x)$, $(f - g)(x)$,

$(fg)(x)$, and $\left(\dfrac{f}{g}\right)(x)$ when $x = 5$. Round your answers to two decimal places.

6. $f(x) = -3x^{1/3}$; $g(x) = 4x^{1/2}$ 　　　　　　 7. $f(x) = 6x^{3/4}$; $g(x) = 3x^{1/2}$

8. Describe and correct the error in stating the domain.

$\times$　$f(x) = 4x^{7/3}$ and $g(x) = 2x^{2/3}$

The domain of $\left(\dfrac{f}{g}\right)(x)$ is all real numbers.

9. The table shows the outputs of the two functions f and g. Use the table to evaluate
$(f + g)(5)$, $(f - g)(0)$, $(fg)(3)$, and $\left(\dfrac{f}{g}\right)(2)$.

x	0	1	2	3	4	5
f(x)	18	13	8	3	−2	−7
g(x)	64	32	16	8	4	2