Bellwork - Find the Inverse

1. $f(x)=4x+12$

$x = 4y+12$

$-12 \quad -12$

$\frac{x-12}{4} = \frac{4y}{4}$

$\frac{x-12}{4} = y$

$\frac{x-12}{4} = f^{-1}(x)$

or $\frac{1}{4}x-3$

2. $f(x)=81x^3$

$\frac{x}{81} = \frac{81y^3}{81}$

$\sqrt[3]{\frac{x}{81}} = \sqrt[3]{y^3}$

$\sqrt[3]{\frac{x}{81}} = f^{-1}(x)$

3. $f(x)=8x^2+6$

$-6 \quad \div 8 \quad \sqrt{}$

$\frac{x-6}{8} = \frac{8y^2}{8}$

$\sqrt{\frac{x-6}{8}} = \sqrt{y^2}$

$\sqrt{\frac{x-6}{8}} = f^{-1}(x)$

4. $f(x)=3\sqrt{5x^4}$

$\div 3 \quad ()^2 \quad \div 5 \quad \sqrt[4]{}$

$\sqrt[4]{\frac{\left(\frac{x}{3}\right)^2}{5}} = f^{-1}(x)$

Function Notation

Given $f(x)=4x^{5/3}$ and $g(x)=6x^2$

1. $f(x) \cdot g(x)$

$4x^{5/3} \cdot 6x^2$

$24x^{5/3+2}$

$24x^{11/3}$

$\frac{5}{3}+\frac{6}{3}=\frac{11}{3}$

2. $f(x)/g(x)$

$\frac{4x^{5/3}}{6x^2}$

$\frac{2x^{5/3-2}}{3}$

$\frac{2x^{-1/3}}{3}$

$\frac{2}{3x^{1/3}}$

3. $g(x)/f(x)$

$\frac{6x^2}{4x^{5/3}}$

$\frac{3x^{2-5/3}}{2}$

$\frac{3x^{1/3}}{2}$

Given $f(x)=8x^{3/4}$ and $g(x)=3x^{11/2}$ and $h(x)=2x^{3/4}$

1. $f(x)+g(x)$

$8x^{3/4}+3x^{11/2}$

$3x^{11/2}+8x^{3/4}$

2. $f(x)+h(x)$

$8x^{3/4}+2x^{3/4}$

$10x^{3/4}$

3. $f(x)-g(x)$

$8x^{3/4}-3x^{11/2}$

$-3x^{\frac{11}{2}}+8x^{3/4}$

$\frac{9}{2}$

Given $f(x)=12x^{5/7}$ and $g(x)=6x^{5/7}$ and $h(x)=3x^{4/5}$

1. $f(x) \cdot g(x)$ $72x^{10/7}$
2. $f(x)+h(x)$ $3x^{4/5}+12x^{5/7}$
3. $g(x)+f(x)$ $18x^{5/7}$
4. $f(x)/h(x)$ $4x^{-3/35}$ $\frac{4}{x^{3/35}}$
5. $f(x)-g(x)$ $6x^{5/7}$
6. $g(x)/f(x)$ $\frac{6x^{5/7}}{12x^{5/7}} = \frac{1x^{5/7-5/7}}{2} = \frac{1x^0}{2} = \frac{1}{2}$
7. $h(x)/g(x)$

HW04

Given $f(x)=0.5x^{7/5}$ $g(x)=8x^{11/2}$ $h(x)=2x^{7/5}$

1. f(x)+g(x)
2. f(x)+h(x)
3. f(x) · g(x)
4. g(x)/f(x)
5. f(x)-h(x)
6. g(x)/h(x)
7. h(x)-f(x)
8. g(x)-h(x)
9. h(x)/g(x)
10. h(x)/f(x)
11. f(x) · g(x)
12. f(x) · g(x) · h(x)
13. f(x) · g(x)/h(x)
14. g(x)/f(x) · h(x)
15. (f(x)+h(x))/g(x)