**Let $f(x) = 2x + 3$, $g(x) = x^2 - 1$, and $h(x) = \frac{x+1}{5}$. Find the indicated value.**

13. $f(g(1))$
14. $h(g(4))$
15. $f(h(-6))$
16. $g(f(2))$
17. $h(f(-3))$
18. $g(g(2))$

$f(g(1))$

$f(0)$

$= 3$

$h(f(-3))$

$h(-3)$

$= -\frac{2}{5}$

$g(g(2))$

$g(3)$

$= 8$

**Let $f(x) = 2x^{-1}$, $g(x) = 2x + 5$, and $h(x) = \frac{x-4}{2}$. Perform the indicated operation.**

19. $f(g(x))$
20. $g(h(x))$
21. $f(h(x))$
22. $g(f(x))$
23. $h(f(x))$
24. $g(g(x))$

$f(g(x)) = f(2x+5)$

$= \frac{2}{(2x+5)^1}$

$= \frac{2}{2x+5}$

$h(f(x))$

$h(2x^{-1})$

$\frac{2x^{-1} - 4}{2} = x^{-1} - 2$

$= \frac{1}{x} - 2\frac{x}{x}$

$= \frac{1-2x}{x} = \frac{-2x+1}{x}$

**Today's Assignment: Finish this worksheet!**

**Let $f(x) = 2x^{-1}$, $g(x) = 2x + 5$, and $h(x) = \frac{x-4}{2}$. Perform the indicated operation.**

**19.** $f(g(x))$

**20.** $g(h(x))$

**21.** $f(h(x))$

**22.** $g(f(x))$

**23.** $h(f(x))$

**24.** $g(g(x))$

$f(h(x))$

$f\left(\frac{x-4}{2}\right) = 2\left(\frac{x-4}{2}\right)^{-1}$

$\frac{2}{1}\cdot\frac{(x-4)^{1}}{2^{1}}$

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

$g(h(x))$

$g\left(\frac{x-4}{2}\right)$

$\frac{2}{1}\left(\frac{x-4}{2}\right) + 5$

$x - 4 + 5$

$x + 1$

**Let $f(x) = 2x + 2$, $g(x) = x^2$, and $h(x) = \frac{3}{x-2}$. State the domain of the operation.**

**25.** $f(x) + g(x)$ $= x^2 + 2x + 2$; All real #'s

**26.** $h(x) - f(x)$

**27.** $h(x) \cdot g(x)$ $\left(\frac{3}{x-2}\right)\cdot\frac{x^2}{1}$ $\frac{3x^2}{x-2}$; $x \neq 2$

**28.** $\frac{g(x)}{f(x)}$ $= \frac{x^2}{2x+2}$; $x \neq -1$

**29.** $h(g(x))$ $\mathbb{R}$

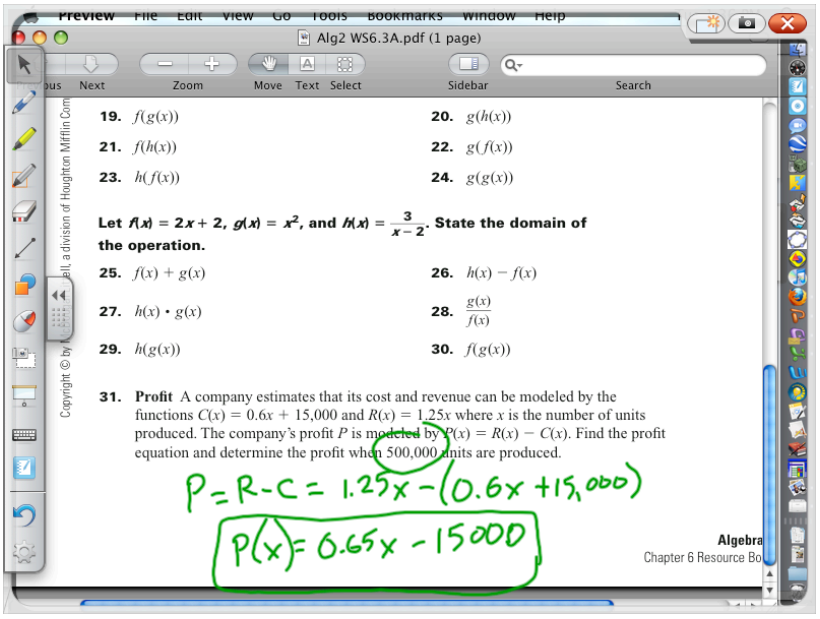
**30.** $f(g(x))$ $\frac{3}{x-2} - (2x+2)$ $\frac{3}{x-2} - 2x - 2$; $x \neq 2$

$f(x^2) = 2(x^2) + 2$

$= 2x^2 + 2$; $\mathbb{R}$

**Today's Assignment: Finish this worksheet!**

**Algebra 2, WS 6.3A Help** **January 12, 2010**




**Today's Assignment: Finish this worksheet!**