

Sect	Notes 4-5 Function Division	Unit 4
Warm Up-		
If $f(x) = 3x + 4$ and $g(x) = x - 7$ find the following:		
1. $(f + g)(x) =$	2. $(f - g)(x) =$	
3. $(g - f)(x) =$	4. $(f + g)(x) + 10 =$	
Example 1: Find the GCF of each of the following.		
GCF:		
A. $18, 36$	B. $16x, 30x$	C. $5xy, 40y$
D. $99z, 9$	E. $11yz, 87z$	D. $24x^2, 12x$

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Example 2: Factor each of the following.			
Factor:			
A. $6x + 12$	B. $45x - 9$		
C. $12g + 40$	D. $55x - 45$		
Operation	Notation	Example: $f(x) = 6x + 12, g(x) = 2x + 4$	Does order matter?
Division	$\left(\frac{f}{g}\right)(x) = \frac{f(x)}{g(x)}$	$\left(\frac{f}{g}\right)(x) = \frac{6x+12}{2x+4} = \frac{3x+6}{x+2}$	Yes

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Example 3: Let $f(x) = 3x + 6, g(x) = 3x, h(x) = 6x + 2$, and $k(x) = 6$.		
A. $\left(\frac{f}{g}\right)(x) = \frac{3x+6}{3x}$	B. $\left(\frac{h}{f}\right)(x) = \frac{6x+2}{3x+6}$	
C. $\left(\frac{g}{h}\right)(x) = \frac{3x}{6x+2}$	D. $\left(\frac{f}{k}\right)(x) = \frac{3x}{6} = \frac{x}{2}$	
E. $\left(\frac{f}{h}\right)(x) = \frac{3x+6}{6x+2}$	F. $\left(\frac{h}{k}\right)(x) = \frac{6x+2}{6} = \frac{3x+1}{3}$	

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Practice:		
$f(x) = 4x + 8$	$g(x) = -5x + 15$	
$h(x) = 4x$	$k(x) = 20$	
A. $4[f(x)] =$	B. $(4 \cdot g)(x) =$	
C. $\left(\frac{f}{h}\right)(x) =$	D. $4[g(x)] + 2 =$	
E. $2[g + k](x) =$	F. $\left(\frac{g}{k}\right)(x) =$	
G. $\left(\frac{g}{f}\right)(x) =$	H. $\left(\frac{g}{h}\right)(x) =$	