

|                           |  |      |
|---------------------------|--|------|
| 4                         | Exam 1, Wednesday 2/10, 10:10 a.m. Then do 2.1, 2.2.             | 2/8  |
| 5                         | 2.3, Writing Project #2 fits right after 2.3. Also do 2.4.       | 2/15 |
| 6                         | Writing Project #2 is due Monday, 2/22, 11:20 a.m. 2.5, 2.6, 2.7 | 2/22 |
| 7                         | Exam 2, Wednesday, 3/2. Finish 3.1, 3.2 by week's end.           | 2/29 |
| 8                         | 3.3, 3.4   | 3/7  |
| SPRING BREAK. NO CLASSES. |  | 3/14 |

WP#2 10% Bonus passed  
 5% .. if today  
 "Regular"

Test 2, next Wednesday.

Today, some Domain stuff.

↳ All is covered in videos  
 for the homework.

See Test 2, from Fall '14:

It lives here:

<http://www.harryzaims.com/121-all/videos/02-Test-Prep-Videos/>

↖ Click on the Earth!

2. Let  $f(x) = \frac{x-6}{x-12}$  and  $g(x) = \sqrt{x+4}$  and.

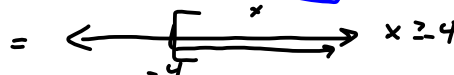
- a. (5 pts) Write the function  $\frac{f}{g}$ . Do not simplify. \*
- b. (5 pts) What is the domain of  $\frac{f}{g}$ ? Give your answer in set notation and interval notation.
- c. (5 pts) Write the function  $f \circ g$ . Do not simplify.
- d. (5 pts) What is the domain of  $f \circ g$ ? Give your answer in set notation and interval notation.

Division by zero  $\frac{A}{B}$  Need  $B \neq 0$ .  
 Square root of negative.  $\sqrt{B}$  Need  $B \geq 0$ .

$g(x) = \sqrt{x+4}$  Need:  $x+4 \geq 0$  set-builder.

$D = \{x \mid x \geq -4\}$

Number line graph is the assist.

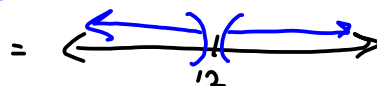


$= [-4, \infty)$  Interval.

$f(x) = \frac{x-6}{x-12}$  Need:  $x-12 \neq 0$

$D = \{x \mid x \neq 12\}$

Basic Domain.



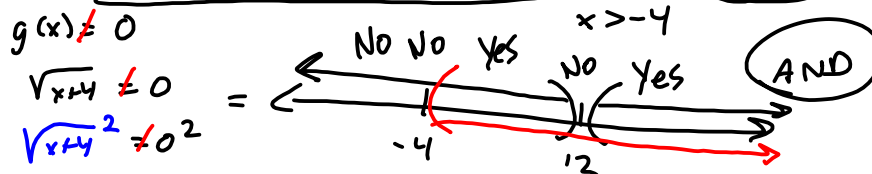
$= (-\infty, 12) \cup (12, \infty)$

$\frac{f}{g} = \frac{f(x)}{g(x)} = \frac{\frac{x-6}{x-12}}{\sqrt{x+4}}$  STOP!

$D(\frac{f}{g}) = \{x \mid x \text{ is something } \frac{f}{g} \text{ can eat.}\}$

$= \{x \mid f \text{ is happy and } g \text{ is happy AND } g(x) \neq 0\}$

$= \{x \mid x \neq 12 \text{ and } x \geq -4 \text{ and } x \neq -4\}$



$= (-4, 12) \cup (12, \infty)$

Domain of  $f \circ g$  next time, using this example.