

WRITE YOUR NAME:

MAC 2241 Quiz 1  
Wednesday February 1st

Question 1. Find the domain of the function.

$$f(x) = \frac{1}{(x-2)(x-7)} + \sqrt{x-4}$$

Since the formula contains division by  $(x-2)(x-7)$ ,  
we must have  $(x-2)(x-7)$  not equal to 0,  
so  $x$  cannot be 2 and  $x$  cannot be 7.

Since the formula contains  $\sqrt{x-4}$ ,  
we must have  $x-4 \geq 0$   
i.e.  $x \geq 4$

So, domain is  $x \geq 4$ , excluding  $x=2$  and  $x=7$

But if  $x \geq 4$  then  $x=2$  is already excluded

DOMAIN:  $x \geq 4, x \neq 7$

or  $4 \leq x < 7, 7 < x < \infty$

or  $[4, 7) \cup (7, \infty)$

