

name : \_\_\_\_\_

section : 109

GSI : Charles Wang

(2 pts) Circle True or False. (+1 for correct, 0 for blank, -1 for incorrect)

1. (True False)  $[0, 1] \in \mathbb{Q}$ .
2. (True False)  $\sin(n\pi) = 0$  for all  $n \in \mathbb{Z}$ .

(10 pts) For the following, you must **justify** your answer to receive credit. (Showing your work counts as justification.)

3. Given  $f(x) = \frac{x-5}{x+7}$  and  $g(x) = (x+7)(x-5)$ , find and give the domain of:
  - (a)  $(f/g)(x)$
  - (b)  $(f \cdot g)(x)$