

1. PROBLEMS TO BE PRESENTED ON 9-20

- (1) First problem for presentation: Integrate  $\int \sqrt{\tan x} dx$   
(2) Second Problem for Presentation: Let  $a \neq 0$  and  $n$  be a positive integer.  
Then find the partial fraction decomposition of

$$f(x) = \frac{1}{x^n(x-a)}$$

- (3) Third problem for presentation: Suppose that  $F, G$  and  $Q$  are polynomials  
and

$$\frac{F(x)}{Q(x)} = \frac{G(x)}{Q(x)}$$

everywhere except for where  $Q(x) = 0$ . Then show that  $F(x) = G(x)$ .