

# Math 10460 - Honors Mathematics II

## Homework 4c - Due Wednesday, February 10

- (5) (a) (Exercise 17, page 665) Think about the equation  $r(t)^2\theta'(t) = c$  for a moment. What is the meaning of  $\theta'(t)$ ? Consider  $P$  at two different times  $t_1$  and  $t_2$  in its orbit and suppose that the distance from  $P$  to  $O$  is much larger at  $t_1$  than at  $t_2$ . Compare  $\theta'(t_1)$  and  $\theta'(t_2)$ . What can you say?
- (b) What physical law does this conclusion support? How does it support the law?