

**MATH 3500(H)**  
**PROBLEM SET #4**

DUE Wednesday, September 16, 2009.

*Problems to work but not hand in:*

§2.1: #1b,e, 5a, 9.

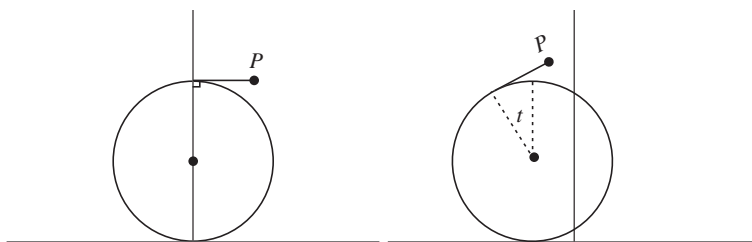
§2.2: #1, 5.

*Problems to turn in:*

WeBWork Homework 4 (due **Sunday**, September 13, **11 pm**, per the usual schedule)

§2.1: #2 (3), 3 (3), 4 (3), 10 (3).

**A.** (2) A 1 ft long plank is rigidly attached to a round drum 3 ft in diameter, as pictured, and the drum rolls without slipping along the ground. Use vector methods to express the position of the endpoint  $P$  of the plank as a function of the angle  $t$  through which the drum has turned.



§2.2: #2 (3), 3 (3), 6 (3), 7\* (3).

*Challenge problems* (Turn in separately):

§2.1: #5b (3), 6 (2), 7<sup>†</sup> (4), 12 (4+).

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\*Hint: For (b), you will need either a formula for  $\mathbb{R}^n - (C \cup D)$  or, if you use the definition directly, the result of Exercise 6(a). Why?!

†Hint: Start with  $dy/dx = y'(t)/x'(t)$ .