

**Advanced engineering dynamics, 5C1150**

**Hand in assignments, batch 2, HT 2006**

**Due Wednesday 27/9**

1) Do problem 10 in *A Collection of Problems in Rigid Body and Analytical Mechanics*, i.e. calculate the time  $T(\alpha)$  required for the coin to complete a full circuit.

Then put the radius to  $r = 1.5$  cm (roughly a Swedish five crown coin) and plot the period  $T$  as a function of  $\alpha$  for  $0.1 < \alpha < \pi/2 - 0.1$ . Find (numerically) the angle  $\alpha$ , expressed in degrees, that makes the period equal to  $T = 1.6$  seconds.

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