

淡江大學九十三年學年度碩士班招生考試試題

系別：機械與機電工程學系

科目：動力學

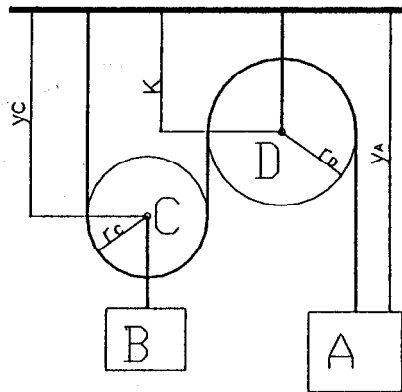
准帶項目請打「○」否則打「×」
簡單型計算機 ○

本試題共 2 頁

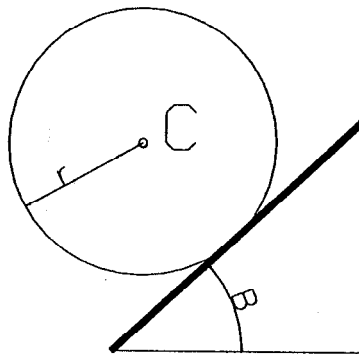
本試題背面印有

There are four problems in this test. Please write down your answer clearly. You may make your own assumptions if necessary.

- (1) Block *A* travels downward with velocity of $3t^2$ m/s. Find the velocity of the block *B* when $t = 4$ s. (25%)



- (2) The cylinder (with mass m and radius r) is released from rest on the inclined plane shown in the figure. The coefficient between cylinder and plane is μ . Please determine the motion of *C*. (25%)



◀ 注意背面尚有試題 ▶

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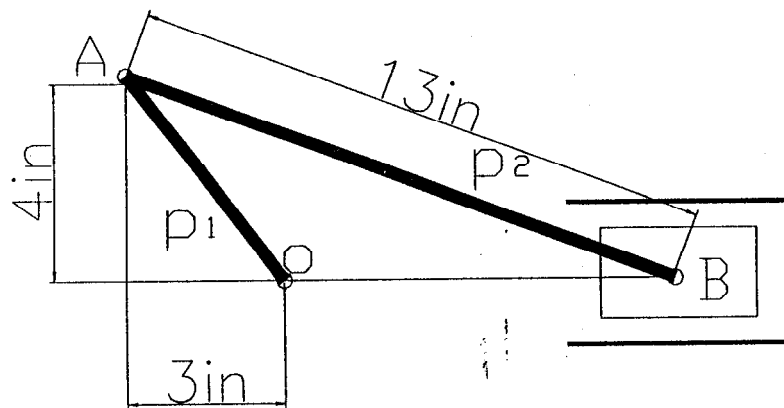
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- (3) The crank arm P_1 shown in the figures turns about a horizontal z axis, through its pinned point end O , with an angular velocity of 10rad/sec clockwise at the given instant. Find the velocity of the piston pin B .
(25%)



- (4) A mechanical system with a rotating wheel of mass m_w (with uniform mass distribution). Springs and dampers are connected to the wheel using a flexible cable without slip on the wheel. Please write all the modeling equations for translational and rotational motion. (25%)

