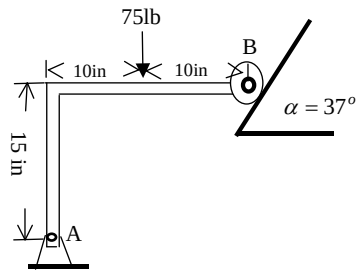
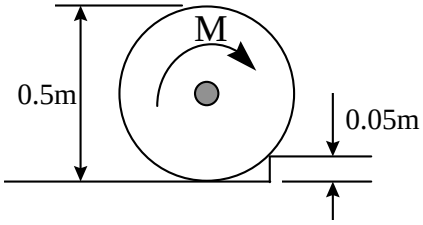
國立嘉義大學九十一學年度轉學生招生考試試題

科目：工程力學　　（請將答案寫在答案卷上）

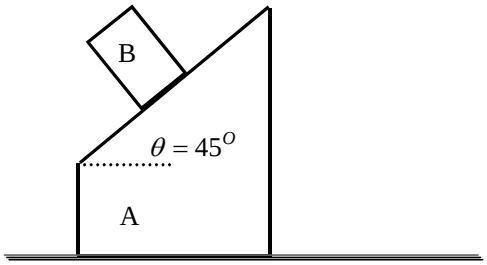
1.The frame shown that support A is connected by a pin and support B is a roller. Determine the reactions at A and B when $\alpha = 37^o$ (25%)



2. A roller with diameter 0.5m is weighted 200N. Determine the moment M to be required to roll over an obstacle with height of 0.05m, and what is the minimum friction coefficient between the roller and the obstacle without slippage? (25%)



3.The block B starts from rest and slides on the wedge A, which is supported by a horizontal surface. Neglecting friction and $4m_B = m_A$, determine the acceleration of the wedge A and the acceleration of the block B relative to the wedge A. (25%)



4. A slender rod of length L is pivoted about a point C located at a distance of b from its center G. If the rod is released in a horizontal position and swings freely, determine the distance of b for which the angular velocity of the rod is maximum as the rod in a vertical position, and then the reaction at C. (25%)