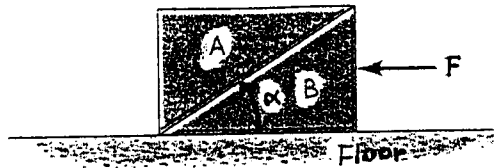


編號: \overline{H} 112
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系所: 機械工程學系乙組, 戊組

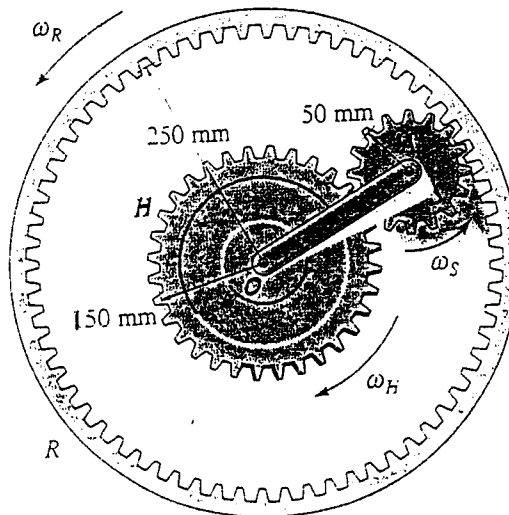
科目: 動力學

1. Blocks A and B each has a mass m . Determine the largest horizontal force F which can be applied to B so that A will not slip up B. The coefficient of static friction between A and B is μ . Neglect and friction between B and the Floor. (25%)



Prob. 1

2. The hub gear H and ring gear R as shown have angular velocities $\omega_H = 10 \text{ rad/s}$ and $\omega_R = 40 \text{ rad/s}$, respectively, determine the angular velocity ω_S of the spur gear S and the angular velocity of its attached arm OA. (25%)



Prob. 2

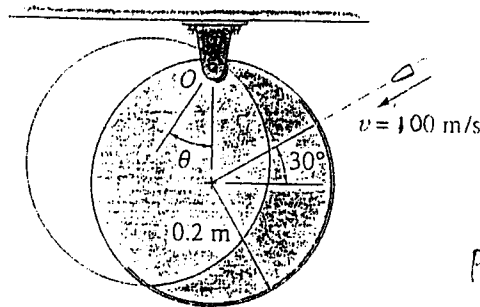
(背面仍有題目, 請繼續作答)

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F103

系所：機械工程學系乙組，戊組

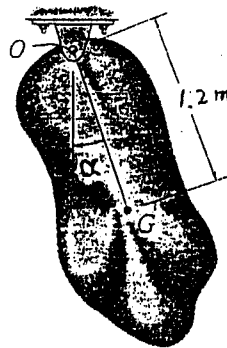
科目：動力學

3. A 5-g bullet having a velocity of 100m/s is fired into the edge of the 5-kg disk as shown. Determine the angular velocity of the disk just after the bullet becomes embedded in it. Also, calculate how far θ the disk will swing until it momentarily stops. The disk is originally at rest. (25%)



Prob. 3

4. The body shown below has a mass of 100-kg, mass center at G, and a radius of gyration about G of 1 m. If it is displaced a small amount α from its equilibrium position and released, determine the natural period of vibration. (25%)



Prob. 4