

系別：航空太空工程學系三年級 科目：工程力學(含靜力學、動力學)

考試日期：12月3日(星期六) 第1節

本試題共 4 大題， 2 頁

本試題雙面印刷

1. The pilot of an airplane carrying a package of mail to a remote outpost wishes to release the package at the right moment to hit the recovery location A as shown in Fig. 1. What angle θ with the horizontal should the pilot's line of sight to the target make at the instant of release? The airplane is flying horizontally at an altitude of 100 m with a velocity of 200 km/h. (25%)

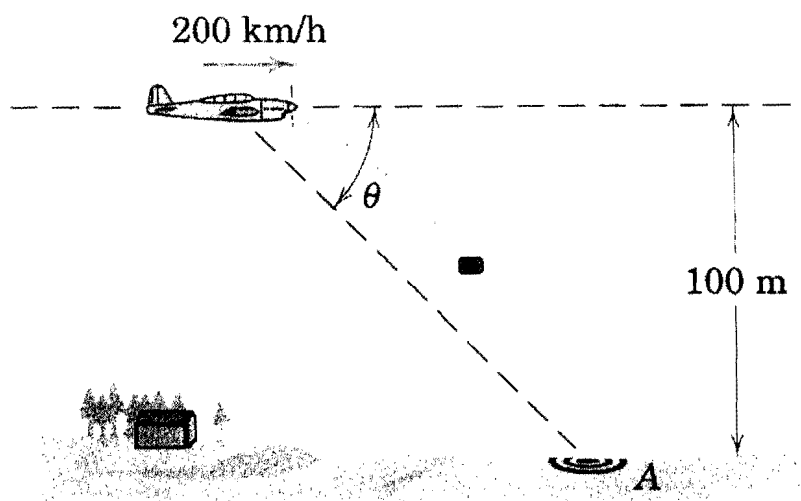


Fig. 1

2. Determine the angle θ at which the force P in the rope should be applied to position the 250 kg cylinder directly over the opening shown in Fig. 2. Calculate the corresponding tension T in the 3.9 m cable AB . Neglect the mass of the pulley and cable. (25%)

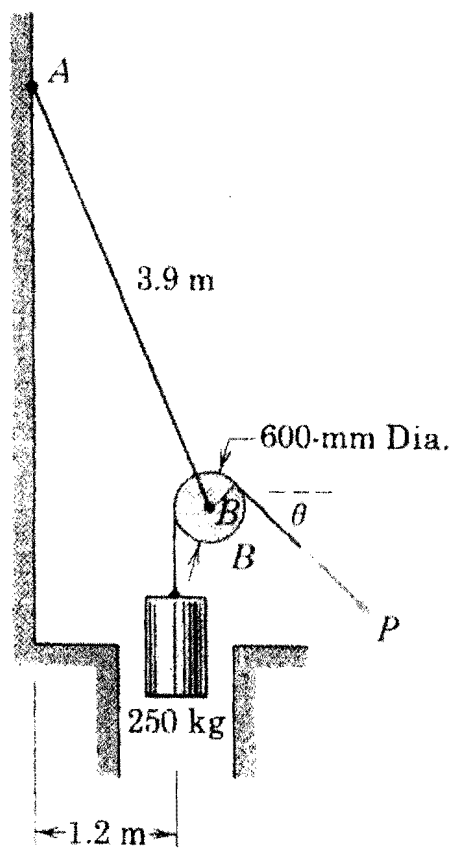


Fig. 2

背面尚有試題

淡江大學 105 學年度日間部寒假轉學生招生考試試題

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3. The car A has a forward speed of 18 km/h and is accelerating at 3 m/s^2 as shown in Fig. 3. Determine the velocity and acceleration of the car relative to observer B , who rides in a nonrotating chair on the Ferris wheel. The angular rate $\Omega = 3 \text{ rev/min}$ of the Ferris wheel is constant. (25%)

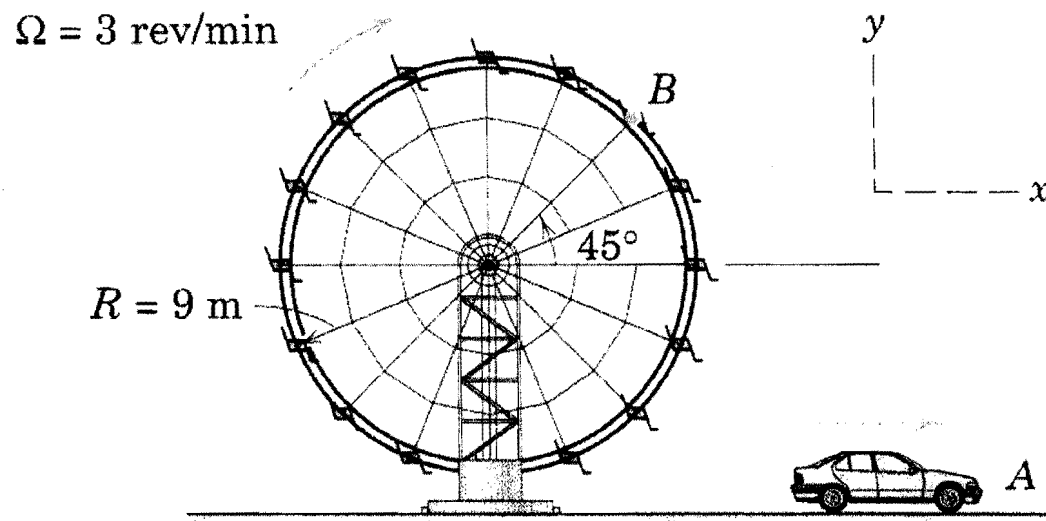


Fig. 3

4. Computer the internal forces in bars AB , AC , BC , and BD for the truss in Fig. 4. (25%)

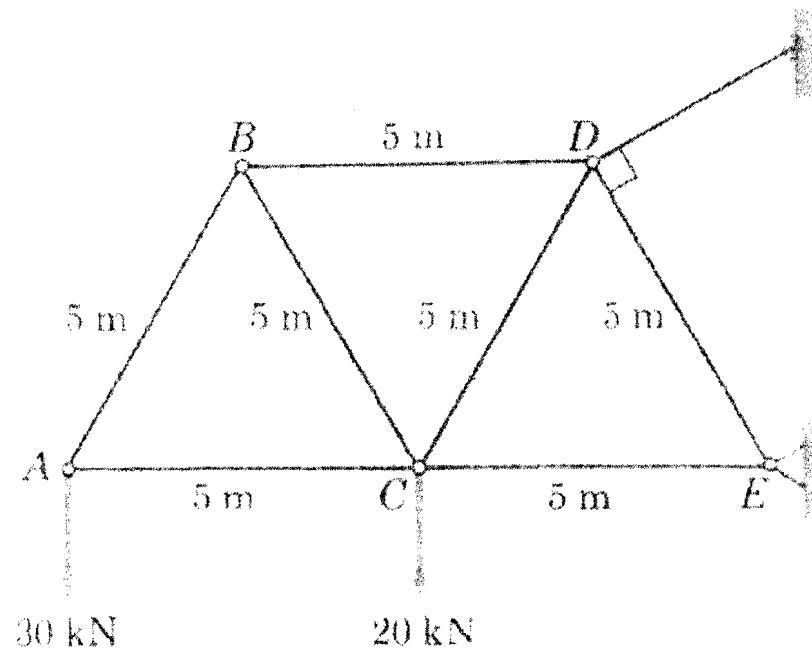


Fig. 4