國　立　宜　蘭　大　學

96 學年度轉學招生考試

（考生填寫）
准考證號碼：

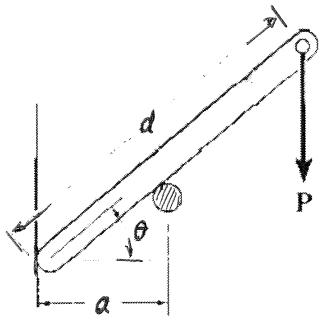
靜　力　學　試　題

《作答注意事項》

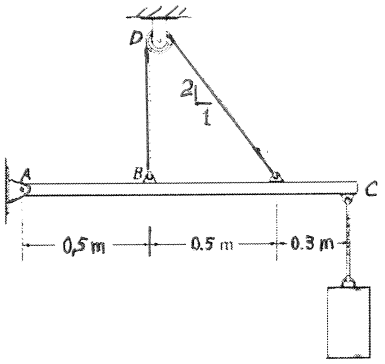
1. 請先檢查准考證號碼、座位號碼及答案卷號碼是否相符。
2. 考試時間：80 分鐘。
3. 本試卷共有 4 題計算題，一題 20~30 分，共計 100 分。
4. 請將答案寫在答案卷上。（請用黑、藍原子筆作答）
5. 考試中禁止使用大哥大或其他通信設備。
6. 考試後，請將試題卷及答案卷一併繳交。
7. 本試卷採雙面影印，請勿漏答。

1. Draw the Free-Body-Diagrams for the following problems, assuming materials are uniform and have gravity on earth. Please neglect friction forces.(20%)

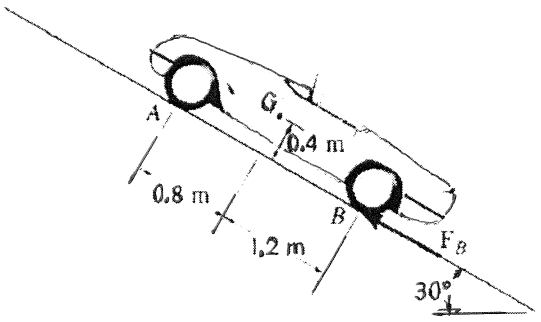
a. Free-Body-Diagram for the bar



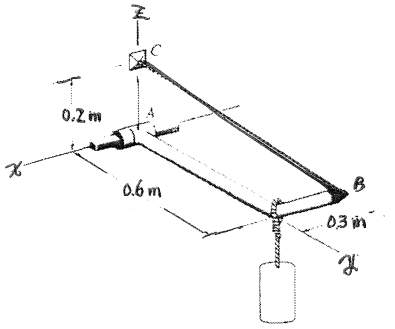
b. Free-Body-Diagram for the bar



c. Free-Body-Diagram for the car

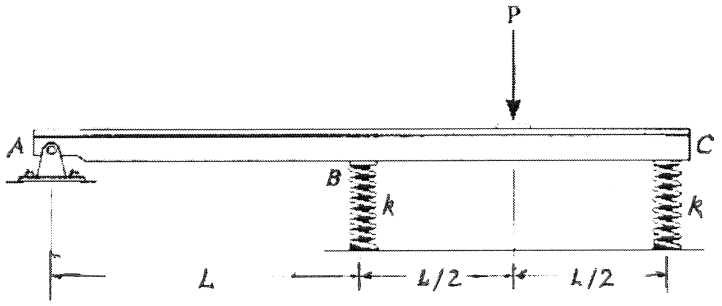


d. Free-Body-Diagram for the bar, with A slide freely along x axis



2. Member AB as shown in Fig. d Problem 1, is supported by a cable BC and a A by a square rod, which fits loosely through the square hole at the end joint of the member as shown. Determine the components of reaction a A and the tension in the cable needed to hold the 800N cylinder in equilibrium. (30%)

3. The rigid beam of negligible weight is supported horizontally by two springs an a pin. If the springs are uncompressed when the load is removed, determine the force in each spring when the load P is applied. Also, compute the vertical deflection of end C. Assume the spring stiffness k is large enough so that only small deflection occur.(25%)



4. The boom supports the two vertical loads. Neglect the size of the collars at D and B and the thickness of the boom, and compute the horizontal and vertical components of force at the pin A and the force in cable CB. Set F1=800N and F2=350N. (25%)