

國立臺灣海洋大學九十九學年度研究所碩士班暨碩士在職專班入學考試試題

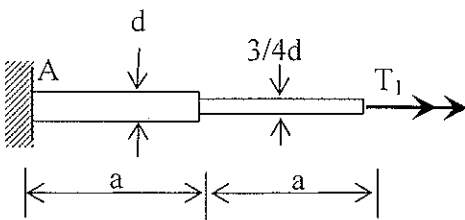
考試科目：材料力學

系所名稱：材料工程研究所碩士班金屬材料組

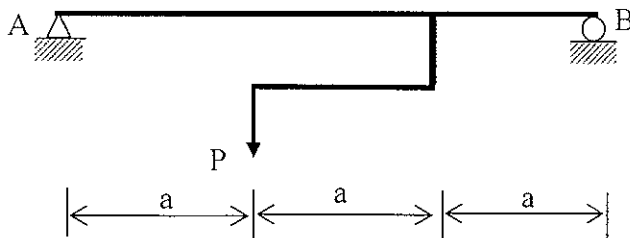
*可使用計算器

1. 答案以橫式由左至右書寫。2. 請依題號順序作答。

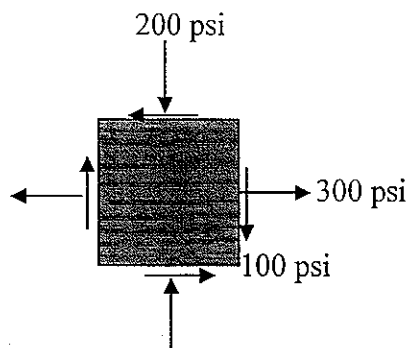
1. A circular stepped shaft has dimensions shown in the figure. (a) Using an energy method, determine the angle of twist at the loaded end. G is given. (25%)



2. Plot the shear V , and moment M diagrams due to the applied load. (25%)



3. At a particular point in a wooden member, the state of stress is as shown in the figure. The direction of the grain in the wood makes an angle of $+30^\circ$ with the x axis. The allowable shear stress parallel to the grain is 150 psi for this wood. Is this state of stress permissible? Verify the answer by calculations. (25%)



4. A hinged beam system is loaded as shown in the figure. Determine the deflection and slope of the elastic curve at point A. (25%)

