

國立臺北科技大學

九十三年學年度機電整合研究所入學考試

工程力學試題

填准考證號碼

第一頁 共一頁

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注意事項：

1. 本試題共四題，每題 25 分，共 100 分。
2. 請按順序標明題號作答，不必抄題。
3. 全部答案均須答在答案卷之答案欄內，否則不予計分。

1. An engine system is shown in Fig. 1. The crank AB has a constant clockwise angular velocity of 1000 r/min. For the crank position indicated in Fig. 1, determine
- (a) the angular velocity of the connecting rod BD,
 - (b) the velocity of the piston P.

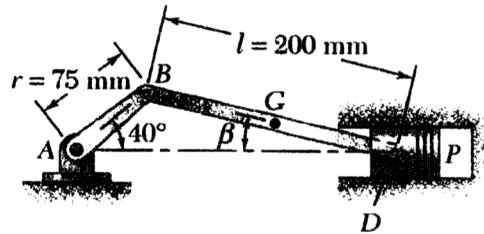


Fig. 1

2. The two blocks shown in Fig. 2 start from rest. The horizontal plane and the pulleys are frictionless. The pulleys are assumed to be weightless. Determine
- (a) the acceleration of each block,
 - (b) the tension in each cord.

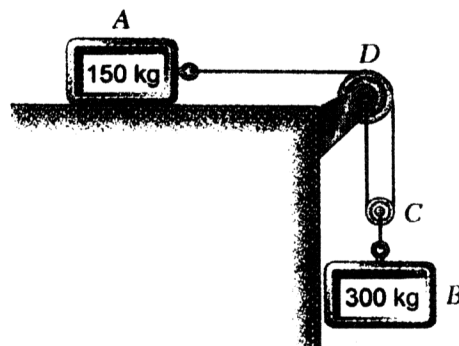


Fig. 2

3. A man raises a 15-kg joist, of length 4 m, by pulling on a rope. Find
- the tension T in the rope,
 - the reaction at A.

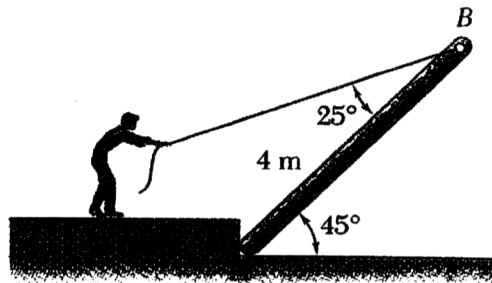


Fig. 3

4. A truss is shown in Fig.4. Using the method of joints, determine
- the force in link AD,
 - the force in link DE.

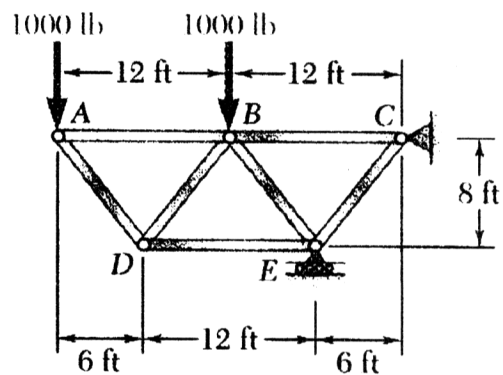


Fig. 4