

淡江大學 105 學年度日間部轉學生招生考試試題

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：7月22日(星期五) 第1節 本試題共 4 大題， 2 頁

本試題雙面印刷

1. Please determine the internal forces in bars BC, BG, and HG for the truss in Fig. 1. (25%)

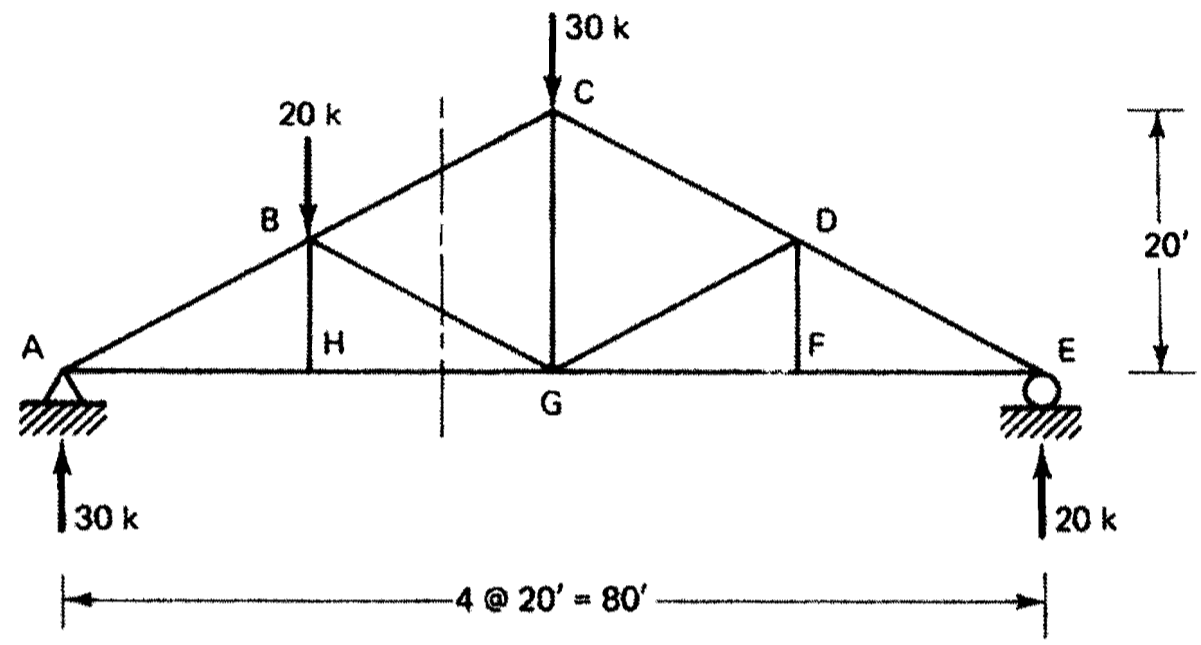


Fig. 1

2. Please determine the reactions for the three-hinged structure shown in Fig. 2. (25%)

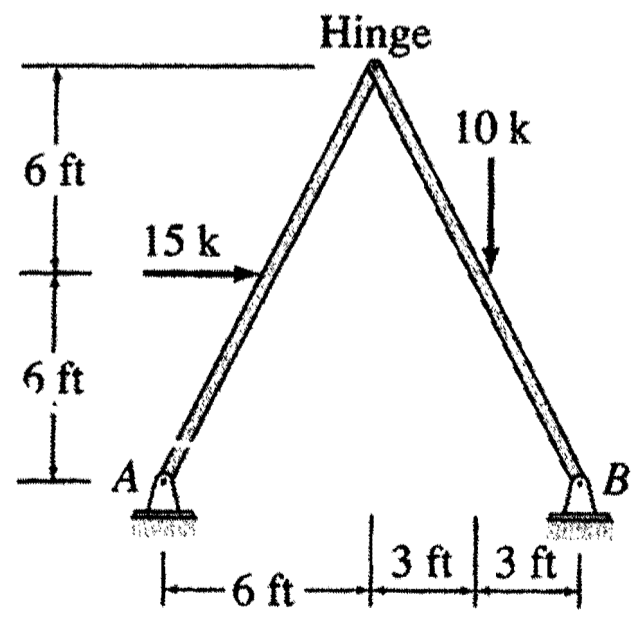


Fig. 2

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3. A helicopter is flying with a constant horizontal velocity of 180 km/h and is directly above Point  $A$  when a loose part begins to fall as shown in Fig. 3. The part lands 6.5 second later at Point  $B$  on an inclined surface. Please determine (a) the distance  $d$  between Points  $A$  and  $B$ , (b) the initial height  $h$ . (25%)

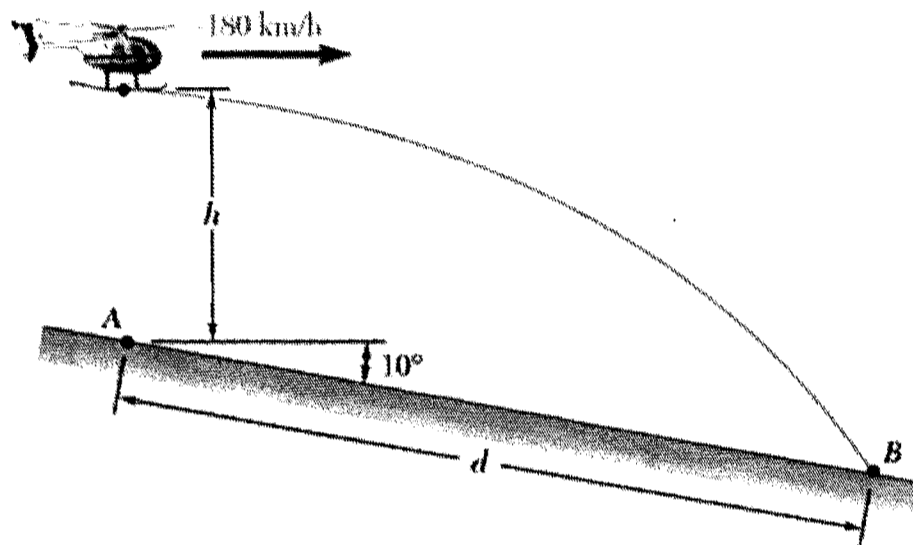


Fig. 3

4. A 10-kg collar slides without friction along a vertical rod as shown in Fig. 4. The spring attached to the collar has an undeformed length of 100 mm and a spring constant of 600 N/m. If the collar is released from rest in position 1, please determine its velocity after it has moved 150 mm to position 2. (25%)

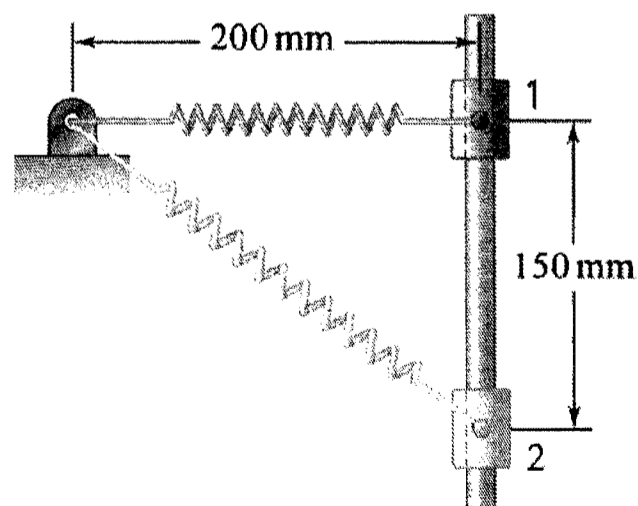


Fig. 4