1. As shown in Fig. 1, if block B has a leftward velocity of 1.2 m/s, determine the velocity of cylinder A.　(25%)
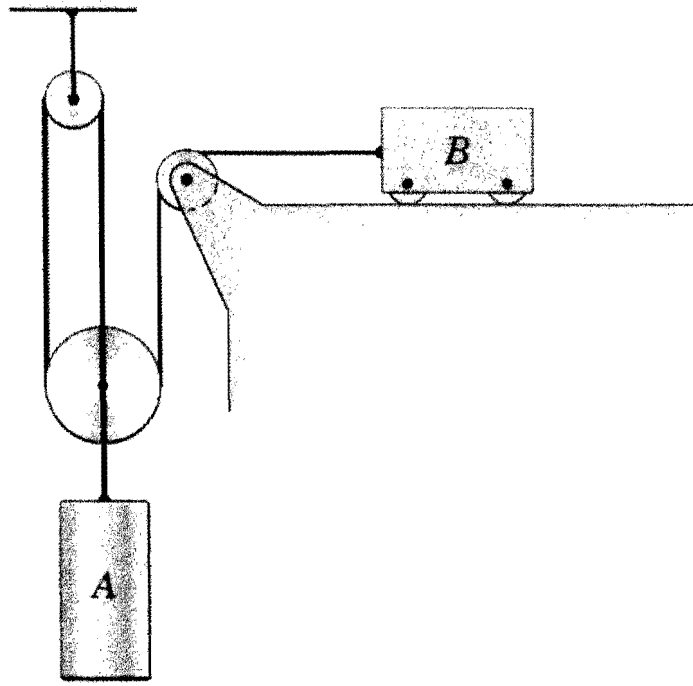

Fig. 1

2. The three small spheres are connected by the cords and spring and are supported by a smooth horizontal surface, as shown in Fig. 2. If a force $F = 6.4$ N is applied to one of the cords, find the acceleration of the mass center of the spheres for the instant depicted.　(25%)

Fig. 2
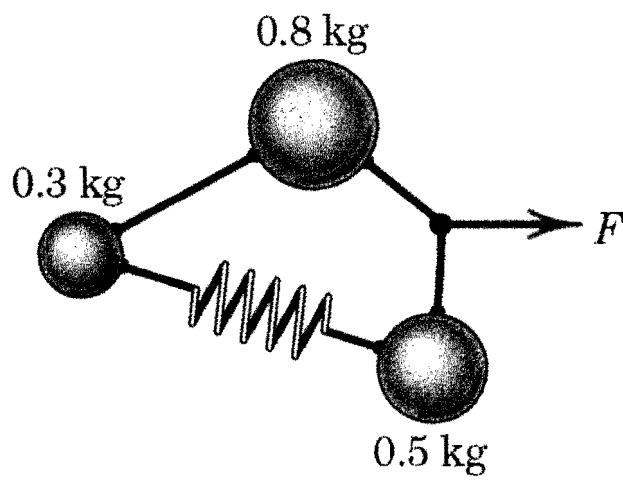
淡江大學 107 學年度日間部轉學生招生考試試題

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 27 日(星期五) 第 1 節　　　　　　本試題共　4　大題，　2　頁

3. Calculate the forces induced in members *KL*, *CL*, and *CB* by the 20-ton load on the cantilever truss, as shown in Fig. 3. Note that $\overline{AB} = \overline{BC} = \overline{CD} = \overline{DE} = \overline{EF} = \overline{FG} = 12$ in. (25%)
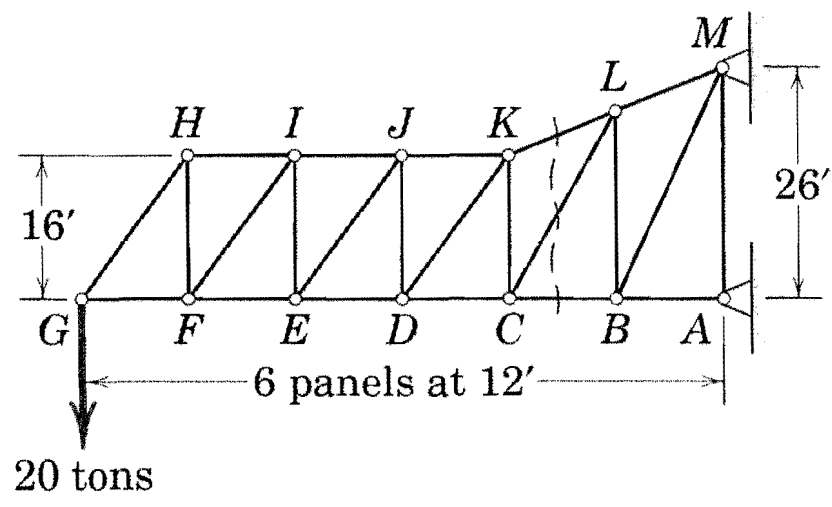
Fig. 3

4. The turnbuckle is tightened until the tension in the cable *AB* equals 2.4 kN, as shown in Fig. 4. Determine the vector expression for the tension *T* as a force acting on member *AD*. Also find the magnitude of the projection of *T* along the line *AC*. (25%)
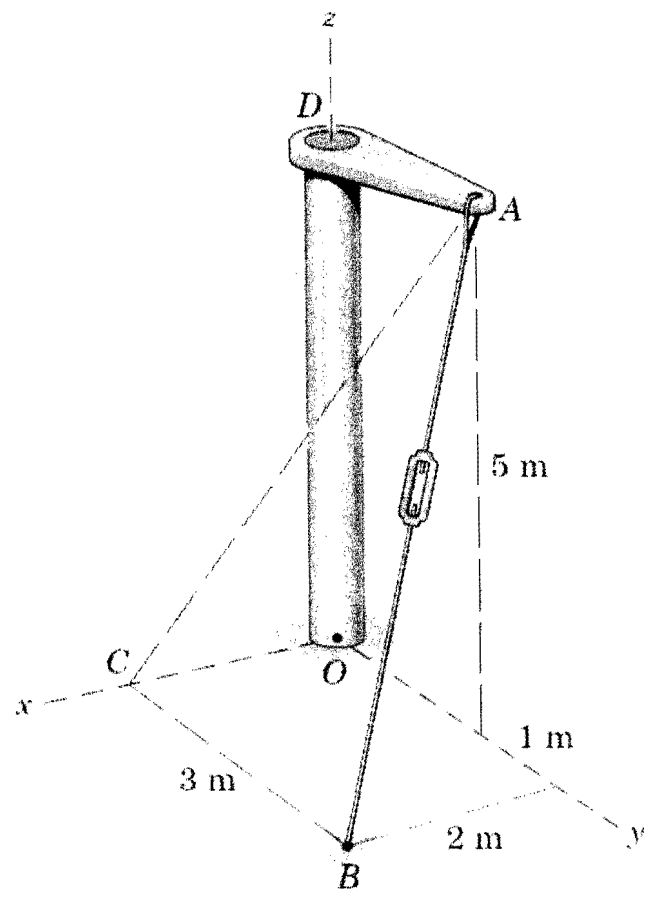
Fig. 4