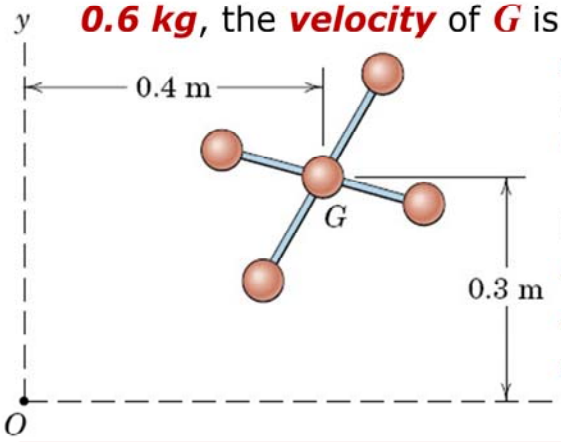
Question of the Day

Each of five connected particles has a ***mass*** of ***0.6 kg***, the ***velocity*** of G is ***3i+4j***, and the ***angular momentum*** of the system ***about*** G is ***1.2k kg·m²/s***.



Determine the ***angular momentum*** H_O of the system ***about*** O.

4/12

$$\underline{H}_O = \underline{H}_G + \underline{\bar{r}} \times \underline{G}, \quad \underline{G} = 3(3\underline{i} + 4\underline{j}) \text{ kg·m/s}$$

$$= 1.20\underline{k} + (0.4\underline{i} + 0.3\underline{j}) \times 3(3\underline{i} + 4\underline{j})$$

$$= 1.20\underline{k} + 3(1.6\underline{k} - 0.9\underline{k})$$

$$= 1.20\underline{k} + 3(0.7\underline{k}) = \underline{3.3\underline{k}} \text{ kg·m}^2/\text{s}$$