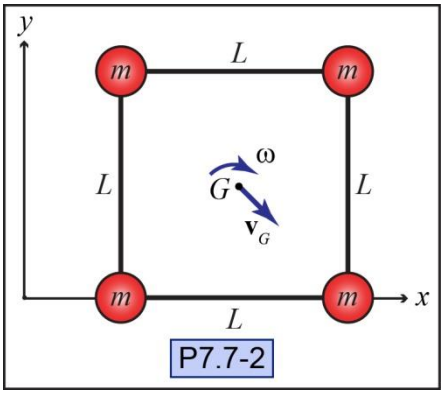
P7.7-2) A system consisting of four 5-kg spheres is connected by four 10 m long rigid, but light, bars. The structure is translating and rotating across the horizontal *xy*-plane in the direction shown. If the velocity of the mass center is $\mathbf{v}_G = 2\mathbf{i} - 2\mathbf{j}$ m/s and the system's overall kinetic energy is 100 N-m at the instant shown, determine the system's rotational speed ω.



P7.7-2

Given:

Find:

Solution:

Determine the speed of each mass as a function of the angular speed.

$v_1(\omega)$ = _____

$v_2(\omega)$ = _____

$v_3(\omega)$ = _____

$v_4(\omega)$ = _____

Calculate the angular speed.

ω = _____