6.15

$r_B = (-100i + 200j + 200k)\ mm$

$r_{BG} = (-100i + 100j)\ mm$

$V_G = W \times r_{BG}$

$= 200(-2i - 2j + k)\ mm/s$

$V_G = \frac{200 \times 3}{1000} = 0.6\ m/s$

$a_G^n = W \times V_G$

$= 1200(2i - j + 2k)\ mm/s^2$

$a_G^n = \frac{1200 \times 3}{1000} = 3.6\ m/s^2$

$a_G^t = \dot{J} \times r_{BG}$

$= 100(2j + 2j - k)\ mm/s^2$

$a_G^t = \frac{100 \times 3}{1000} = 0.3\ m/s^2$

$a_G = \frac{\sqrt{a_G^{t2} + a_G^{n2}}}{1000} = 3.61\ m/s^2$

$= a_G^t + a_G^n = 100(26i - 10j + 23k)\ mm/s^2$