F2009 Exam 3 Solutions	S2010 Exam 3 Solutions
1-1)B	1-1)C
1-2)A	1-2)A
1-3)D	1-3)B
1-4)C	1-4) $32\hat{i} - 8\hat{j} - 4\hat{k}$
1-5)D	1-5) (1,1.5)
1-6)D	2 (a) $v_A = 15.33\,{}^m\!/_s$
2 (a) $v_B' = 3.18\,{}^m\!/_s$, $v_A' = -396.82\,{}^m\!/_s$	2 (b) $v_A' = -13.836\,{}^m\!/_s$, $v_B' = 9.5\,{}^m\!/_s$
2 (b) $\Delta x = 0.318m$	2 (c) $h_A' = 9.76m$
2 (c) $\overline{F} = 31{,}872.5N$	3 (a) $I = 1584 kgm^2$
2 (d) $v' = 1.59\,{}^m\!/_s$	3 (b) $\vec{L} = 900\,{}^{kgm^2}\!/_s\,\hat{k}$
2 (e) $\Delta x = 0.145m$	3 (c) $I' = 1593 kgm^2$
3 (a) $x_{cm} = 0.9m$, $y_{cm} = 0.064m$	3 (d) $\omega = 0.565\,{}^{rad}\!/_s$
3 (b) $x_{cm} = 1.2m$, $y_{cm} = 0.237m$	$T_A - m_A g = m_A a$
3 (c) $v_A' = 1.5\,{}^m\!/_s$, $v_C' = 2.598\,{}^m\!/_s$, $\theta_C' = 0°$	4 (b) $RT_B - RT_A = I\alpha$
4 (a) $x_{cm} = -0.384m$, $y_{cm} = 0m$	$m_B g - T_B = m_B a$
4 (b) $I = 4700 kgm^2$	4 (c) $a = 0.74\,{}^m\!/_{s^2}$
4 (c) $\alpha = 0.383\,{}^{rad}\!/_{s^2}$	4 (d) $t = 3.677s$
4 (d) $\alpha' = 0.319\,{}^{rad}\!/_{s^2}$	
4 (e) $\Delta t = 63.75s$	