1) a) $a_i(t-t_i)^3 + b_i(t-t_i)^2 + c(t-t_i) + d_i$

$a_i = -0.0251$

$b_i = 0.1884$

$c_i = 0$

$d_i = 0$

Assumptions

1. Velocities are 0 at start and end
2. Constant acceleration

b) Submitted via scholar

c) min vel: 0 min accel.: $-0.4\ rads/s^2$

max vel: 0.5 rad/s max accel.: $0.4\ rads/s^2$

2) a) 1-2

$\alpha(t) = -0.003424t^3 + 0.02568t^2 + 0.286$

$\beta(t) = 0.01536t^3 - 0.1152t^2 - 1.04$

2-3

Rest is in images