15.57 (a) A plot of $1/[NH_4NCO]$ versus time is linear, so the reaction is second order with respect to NH_4NCO.
(b) Slope = k = 0.0109 L/mol · min.
(c) $t_{1/2}$ = 200. min
(d) $[NH_4NCO]$ = 0.0997 mol/L

15.63 (a) After 125 min, 0.251 g remains. After 145, 0.144 g remains.
(b) Time = 43.9 min
(c) Fraction remaining = 0.016

15.71 After 30 min (one half-life), P_{HOF} = 50.0 mm Hg and P_{total} = 125.0 mm Hg. After 45 min, P_{HOF} = 35.4 mm Hg and P_{total} = 132 mm Hg.