P. 248 Dr. Bob

1. A. No. The air provides a lift force.
   B. Yes. Freefall vertically & constant velocity horizontally. Ignore air resistance.
   C. No. The rocket engine provides lift. Not vertical free fall.
   D. Yes. Free fall + constant v horizontally.

2. C. This looks like a parabola as it should.

3. C. In front of the place it was dropped, because it it moving forward relative to the ground.

4. a) x increase with vt.
   b) v_x is constant - No horizontal force.
   c) v_y Decreases, then increases in magnitude. Rises, then turns around & falls.
   d) $a_x = 0$, No horizontal force.
   e) equals -g, acceleration due to gravity.

5.
   a). Incorrect; should be $v_{fy}^2 = v_{iy}^2 + 2a_y \Delta y$

   b) Incorrect; $\Rightarrow y_f = y_i + v_{iy}\Delta t + \frac{1}{2} a_y \Delta t^2$

   c) Correct.

   d) Correct.

   e) Incorrect; $v = \sqrt{v_x^2 + v_y^2}$

   f) Incorrect; No way, no how.