1. $\int_1^2(\int_{-1}^1 3y^2 - x^2 + 2ydx)dy$

   - $\int_{-1}^1 3y^2 - x^2 + 2ydx =$
     $3xy^2 - \frac{x^3}{3} + 2xy\Big|_{-1}^1 =$
     $3y^2 - \frac{1}{3} + 2y - 3y^2 - \frac{1}{3} + 2y =$
     $\frac{2}{3} + 4y$
   - $\int_1^2 \frac{2}{3} + 4ydy =$
     $\frac{2y}{3} + 2y^2\big|_1^2 =$
     $\frac{4}{3} + 8 - \frac{2}{3} - 2 = \frac{2}{3} + 4$

2.