HOMEWORK 3-PART A+B

1. Solve the following differential equations

(a) $(xy-1)dx+(x^2-xy)dy=0$

(b) $2ydx+(x+y)dy=0$.

2. Find an integrating factor for each of the following equations

(a)$(\frac{y^2}{x}-y)dx+xdy=0$;

(b)$(x^2y^2-1)dx+(\frac{x}{y}+x^3y)dy=0$

3. Consider the diffferential equation $2ydx+3xdy=0$. Determine conditions on a and b so that $u(x,y)=x^ay^b$ is an integrating factor. Find a particular integrating factor and use it to solve the differential equation.