Problem 1

a) $r^{n} = r^{n} g_{n} r r^{v}$

= 900000

 $= \frac{1}{2} (grv + gor) d^{n} d^{v}$

 $=\frac{1}{2}\left(g_{r},\chi^{r}\chi^{r}+g_{r},\chi^{r}\chi^{r}\right)$

 $=\frac{1}{2} \cdot 9 \sim \left\{ \left(\right) \right\}$

= grig g ~ I = 411 [

{ x ~ x ~ } = 2 9 ~ 2

11 (identity matrix)

 $(2g^{n}H - 8p Y^{r})$

= 28 mg - 8 mg x

= 28 - 48 = -28

{xxx3=29n4

=> / x x = 2 g x 11 - x x x

= 29 ~ 8° 8m - 8° 29 ~ 8m + 4 8° 80

= 2 818 - 2 8 81 + 4 8 8

- 2 8 8 8 4 2 8 7 8 C

= 2 (6 (8 + 8 8)

= 2 { 8',8"}