Subject: Session 54

Year. Month. Date. ( )

1. $$\begin{vmatrix} r_x & \theta_x \\ r_y & \theta_y \end{vmatrix} = \begin{vmatrix} \frac{2x}{2\sqrt{x^2+y^2}} & \frac{-y/x^2}{1+(y/x)^2} \\ \frac{2y}{2\sqrt{x^2+y^2}} & \frac{1/x}{1+(y/x^2)} \end{vmatrix} = \frac{1}{r}$$

2. $$\begin{vmatrix} x_u & x_r \\ y_u & y_r \end{vmatrix} = \begin{vmatrix} 1 & 0 \\ \frac{-u}{\sqrt{r^2-u^2}} & \frac{r}{\sqrt{r^2-u^2}} \end{vmatrix} = \frac{r}{\sqrt{r^2-y^2}}$$