$$\frac{1}{2}(x9-y^{2})^{T}(x9-y^{2}) = \frac{1}{2}\sum_{i=1}^{m}(h_{0}(n^{(i)})-y^{(i)})^{2}$$

$$= J(0)$$

$$= \int_{A^{T}}(x) A^{T} A^{T} A^{T} A^{T} A^{T} C^{T} + BA^{T} C$$

$$= J(0)$$

$$= J(0)$$

$$= J(0)$$

$$= B^{T}A^{T}C^{T} + BA^{T}C$$

$$= B^{T}$$

$$= \frac{1}{2} \nabla_{\theta} \left(O^{T} \chi^{T} - y^{T} \right) \left(X \theta - y \right)$$

$$= \frac{1}{2} \nabla_{\theta} \left(O^{T} \chi^{T} X \theta - \theta T \chi^{T} y - y^{T} X \theta + y^{T} y \right)$$

$$= \frac{1}{2} \nabla_{\theta} \left(O^{T} \chi^{T} X \theta - \theta T \chi^{T} y - y^{T} X \theta + y^{T} y \right)$$

$$= \frac{1}{2} \nabla_{\theta} t_{r} (\theta^{T} x^{T} x \theta - \theta^{T} x^{T} y - y^{T} x \theta + y^{T} y)$$

$$= \frac{1}{2} \nabla_{\theta} (t_{r} \theta^{T} x^{T} x \theta - 2t_{r} y^{T} x \theta)$$

$$= \frac{1}{2} \nabla_{\theta} (t_{r} \theta^{T} x^{T} x \theta - 2t_{r} y^{T} x \theta)$$

$$= \frac{1}{2} \nabla_{\theta} (t_{r} \theta^{T} x^{T} x \theta - 2t_{r} y^{T} x \theta)$$

$$= \frac{1}{2} \nabla_{\theta} (t_{r} \theta^{T} x^{T} x \theta - 2t_{r} y^{T} x \theta)$$

$$= \frac{1}{2} \nabla_{\theta} (t_{1} \theta^{T} x^{T} x \theta - 2t_{1} y^{T} x \theta)$$

$$= \frac{1}{2} \left(x^{T} x \theta + x^{T} x \theta - 2x^{T} y^{T} \right)$$

$$= \frac{1}{2} \left(x^{T} x \theta + x^{T} x \theta - 2x^{T} y^{T} \right)$$

$$= \chi^T X \theta - \chi^T g$$

$$\nabla_{\theta} J(\theta) \stackrel{\text{set}}{=} \overrightarrow{O} \text{ for } \theta \text{ set } J(\theta) \text{ in min}$$

$$\nabla_{\theta} J(\theta) = \chi^{T} \times \theta - \chi^{T} y = 0$$

$$\chi^{T} \times \theta - \chi^{T} y = 0$$

$$\left[\theta = \chi^{T} y (\chi^{T} \chi)^{T} \right]$$