9.

$$\frac{d}{dx}\mathcal{N}(x|\mu,\sigma^2) = \underbrace{-\mathcal{N}(x|\mu,\sigma^2)\ \frac{x-\mu}{\sigma^2}}_{1}$$

$\Downarrow$ setting this to zero

$$x = \mu.$$

$$\frac{\partial}{\partial x}\mathcal{N}(x|\mu,\Sigma) = -\frac{1}{2}\mathcal{N}(x|\mu,\Sigma)\nabla_x\{(x-\mu)^T\Sigma^{-1}(x-\mu)\}$$

$$= -\mathcal{N}(x|\mu,\Sigma)\,\Sigma^{-1}(x-\mu)$$

$\Downarrow$ setting this to zero
left-multiplying by Σ

$$x = \mu$$