$$U(1) = \alpha \times_{1} + b \times_{2}$$

$$MU_{1} = \frac{\partial U(1)}{\partial \times_{1}} = 0$$

$$MU_{2} = \frac{\partial U(1)}{\partial \times_{2}} = \frac{MU_{1}}{b}$$

$$MRS = \frac{MU_{1}}{MU_{2}} = \frac{C}{b}$$

$$(X_{1}, X_{2})$$

 $(4,100)$
 $U(X_{1}, X_{2}) = min\{X_{1}, X_{2}\}$
 $= min\{4,100\} = 4$

$$U(X_{1}, X_{2}) = min \{X_{1}, \frac{1}{2}X_{2}\}$$

 $(X_{1}=1, X_{2}=2)$
 $U(X_{1}) = min \{1, \frac{1}{2}(2)\} = 1$
 $= \frac{1}{2}(8) = 1$