b) If the priors are weighted s.t. $P(C_1) = .9$ and $P(C_2) = .1$,

$$P(C_1|x) = \frac{.9 * .13}{.9(.13) + .1(.33)} = \boxed{.78}$$

$$P(C_2|x) = \frac{.1 * .33}{.9(.13) + .1(.33)} = \boxed{.22}$$

$\therefore$ it would belong to C_1