Problem (3)

x_1 = hours Studied

x_2 = undergrad GPA

y = reciene an A

Coefficient in logistic Regression fit

$\hat{\beta}_0 = -6 \quad \hat{\beta}_1 = 0.05 \; ; \quad \hat{\beta}_2 = 1$

given $x_1 = 40$ & $x_2 = 3.5$

(a) $$\hat{p}(x) = \frac{e^{-6+0.05\times 40 + 1(3.5)}}{1 + e^{-6+0.05\times 40 + 1(3.5)}}$$

$$\boxed{= 0.377\overline{54}}$$

(b) given $\hat{p}(x) = 50\% \quad x_2 = 3.5$

$$0.5 = e^{-6+0.05x_1+3.5} \Big/ 1+e^{-6+0.05x_1+3.5}$$

$$\Rightarrow \boxed{x_1 = 50} \quad \text{50 hours.}$$