c) X_1 = hours studied per week
X_2 = undergrad GPA
Y = receives an A

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

i) $P(Y=1 \mid X_1=40, X_2=3.5)$

We get $\beta^T x = -6 + 0.05 \times 40 + 1 \times 3.5$

$= -0.5$

$\Rightarrow \eta(x;\beta) = \frac{e^{-0.5}}{1+e^{-0.5}}$

$\simeq 0.38$

The probability this student gets an A in the class is $\boxed{\simeq 37.75\%}$

ii) $\eta(x;\beta) \geq 0.5 \iff \frac{e^{\alpha}}{1+e^{\alpha}} \geq 0.5$

$\iff e^{\alpha} \geq 0.5 + 0.5e^{\alpha}$

$\iff 0.5e^{\alpha} \geq 0.5$

$\iff e^{\alpha} \geq 1$

$\iff \alpha \geq 0$

$\iff -6 + 0.05x_1 + 1 \times 3.5 \geq 0$

$\iff 0.05x_1 \geq 2.5$

$\iff x_1 \geq 50$

The student would need to study $\boxed{\text{at least 50h}}$ to have a 50% chance of getting an A in the class.