

a)

Variable	Coefficient	SE	t-value	p-value
Intercept	-2.488	0.890	-2.796	0.005
Male	0.954	0.158	6.029	0.000
Active	0.914	0.185	4.945	0.000
Age	0.070	0.036	1.964	0.050
(Age/10) ²	-0.069	0.034	-2.015	0.044
log-likelihood -601.862				

b) Interpretation parameters the same
 does not matter how you code the binary variable y_i .
 = respi

c) log likelihood $H_1 = -601.862$
 $H_0 = -636.097$

$$LR = -2(L_1 - L_0) = -2(-601.862 - (-636.097)) = 68.470$$

$\chi^2(2)$ -distribution under H_0

$\Rightarrow H_0$ rejected at 5% level

$H_0: \beta_1 = \beta_2 = 0$ rejected at 5% level