(a) **iii**

After plugging in the models where X3 = 1 (female) and X3 = 0 (male), we get these equations:

(*Male*): yhat = 50 + 20GPA + .07IQ + .01GPA*IQ

(*Female*): yhat = 85 + 10GPA + .07IQ + .01GPA*IQ

Cancelling out the 3rd and 4th terms, we get:

(*Male*): 50 + 20GPA

(*Female*): 85 + 10GPA

This tells us that for GPA's > 3.5, males earn more than females on average.

(b) **$137,000**

Plugging in the estimated coefficients into the equation, we get:

50 + (20 * 4.0) + (.07 * 110) + (35 * 1) + (.01 * (4 * 110)) + (-10 * (4 * 1)) = 137.1, or $137,100

(c) **False**

We need the coefficient's standard error to be able to test a hypothesis, calculate a p-value, and make a conclusion regarding the significance of the interaction effect.