Logistic regression in TensorFlow

a) Open the notebook log_reg_challenger and run the fist 3 cells. We predict the the probability $p(y_i = 1|x_i)$ with the formula:

$$p(y_i = 1|x_i) = \frac{e^{(b+W'x_i)}}{1 + e^{(b+W'x_i)}} = \frac{1}{1 + e^{-(b+W'x_i)}}$$

Look at the predicted $p(y_i = 1|x_i)$ values with our given start parameters $W = -0.2$ and $b = 20$. What do you observe?

b) Now lets try to find better values for W and b. Lets assume W is given with -1. We want our probability $p(y_i = 1|x_i)$ to be 0.5. What is the value for b in this case.
Hint: at which x value should $p(y_i = 1|x_i)$ be 0.5, look at the data. $1 + e^{-(b+W'x_i)}$ must be 2.

c) Run the TensorFlow forward pass in cell 5 optimize the values for W and b in cell 6.
Fetch the loss, W and b and print the final values.
Hint: You can't use the same names for the results of your fetches as you have used for the TensorFlow graph. See cell 5.