Thanks! If you would like to complete this problem again, you can leave and come back to this page, or use your browser's refresh button.

Here's the explanation you wrote:

c is called the "guessing parameter"? By "guessing parameter", we mean that c measures how easy it is to get the question right for someone with almost no knowledge in the area being tested (very low θ) and who is likely to be guessing. a helps to determine the discrimination level of a question, the higher the value of a, steeper the slope of the curve, easier to discriminate students with slightly different abilities. b relates to the question's difficulty, increasing b shifts the curve to the right, so the average student has less chance to answer the question correctly, making the question more difficult.

Here is feedback from the instructional team:

a corresponds to the question's discrimination in the following way: the larger the value of a the better it is at discriminating between test-takers at high and low ability levels. In terms of the graph, a larger a-value means a steeper slope at the inflection point.

b corresponds to the question's difficulty in the following way: a harder question will have a b-value greater than an easier question. In terms of the graph, a larger b-value means the inflection point of the graph is further to the right.

c corresponds to the question's guessing level in the following way: as ability level θ decreases, the chance a student will get the question correctly approaches the guessing level, that is, it is as if they just guessed the answer from the available choices.

c also affects the slope at the inflection point - a larger guessing level decreases the slope of at the inflection point, which means the greater the guessing level the less good it is at discriminating between test-takers at high and low ability levels. (This should make some intuitive sense - a lower guessing level means more choices for students to choose from so it should be better at discriminating between abilities than a level of 1/2 which means there are only two choices.)