

1. Negate the following statements. Write the negation in two equivalent, but different ways.
 - a) I am a grey rational. (You may assume he is a dragon!)

 - b) You can pay your tuition with either a check or a credit card.

 - c) I like chocolate chips and ice cream.

 - d) If you do your homework, then you will receive a better grade in class.

 - e) The faculty resolution passed unanimously.

2. Answer the following dragon problem, similar to those on the in-class activity. Remember that rational dragons tell the truth and predator dragons lie. Recall there are only two colors of dragons red and grey.
 - a) A knight comes across a dragon and draws his sword. He quickly inquires, "What color and type of dragon are you?"

Dragon: 1) If I were a predator, then I would be lying.
2) I am not red.

State what color and type of Dragon the knight encountered.

 - b) Write a proof of the answer you found in part a). Be sure to draw out all of the logical reasoning you used. Make sure your proof shows not only that your answer works, but that it is the **only** possible correct answer.

3. (**New version as of January 24**) Recall the Prison Activity from class. Remember the third prisoner was able to determine his hat color and thus was set free, even though he was blind.
 - a) Prove the following statement:

The third inmate's hat is red.