Math 45021 Homework 3

Due March 1st

1. pg. 44: 3.2, 3.3, 3.5, 3.6

2. pg. 54: 4.1, 4.3, 4.9
   Note: 4.3 has two cases to consider, which can make the problem seem much more difficult. My suggestion is to handle each case within each "subproof". That is, show $a \to b$ for case 1, then figure out how to adapt it for case 2.

3. pg. 73: 5.1, 5.2, 5.8, 5.12

4. Go to `http://www.cut-the-knot.org/pythagoras/` and look through a few of the proofs. Pick one that you like and write it up for me with as much detail as you can provide. Please note that there are over 100 proofs of the theorem here. Some of them may require more background reading (left to your discretion if you want to do so.) Some of them may use other techniques in geometry that we have not covered but you know, for which you can provide the details. Many are effectively the same proof with slight rearrangements. Please don't all pick the same one.