TMATH 342: WrittenHW 1

Read Giusti's "Thinking Topologically" pages 1-14 and then do:

1. [4] Prove Lemma 5 on page 8.
2. [4] If the following graphs are graph isomorphic, prove it. If the following graphs are not isomorphic, prove it.
   (a) $V_1 = \{v_i\}_{i\in[6]}$, $E_1 = \{v_1v_2, v_1v_3, v_2v_3, v_4v_5, v_4v_6, v_5v_6\}$
   (b) $V_2 = \{w_i\}_{i\in[6]}$, $E_2 = \{w_1w_2, w_1w_3, w_2w_4, w_3w_5, w_4w_6, w_5w_6\}$
3. [2] Give and example of graph homomorphism $\Phi : \Gamma_1 \to \Gamma_2$ so that for some vertex v, $||v|| > ||\phi(v)||$

Note, in this class, it is more important to communicate clearly, than it is to be correct! Make sure that you edit your work (and your peers!!) so that your completed homework is easily understood!