1. A pipeline register allows reading an old value while a new value is being written. 
   a. Why is that characteristic needed for proper operation of the pipeline? 
   b. When the clock “ticks” (strobes) what happens? 

2. In the week3.pdf PowerPoint slide #27 “HW Change for Forwarding” (below), the forwarding wires (blue wires in slide #27) go into Mux’s rather than into pipeline registers. Why? (Hint: think about timing.) 

3. In the week3.pdf PowerPoint slide #26 “Forwarding to Avoid Data Hazard” (below) there is a vertical arrow from one register file image to another. However, if we assume that we cannot read a value from the register file at the same time that the value is being written, that arrow is incorrect. 
   a. What devices should the arrow connect? Why? 
   b. The next slide, #27, shows the wires needed for forwarding. Which wires are used for this forwarding? Add new wires, if they are needed.