HORMONAL REGULATION OF BLOOD VOLUME AND OSMOLALITY
1) Name 2 ways by which JG cells can be stimulated to release renin:
     1)
     2)

2) On your white board, write out the steps involved in the production of angiotensin II starting with renin:

3) What is the ultimate goal of Angiotensin II?
     - List several functions of angiotensin II:

4) Name one hormone that opposes the actions of angiotensin II:
     - What is the ultimate goal of this hormone?

5) While on a backpacking trip, Jane consumed some unfiltered lake water, only to wake up the next day with a severe case of diarrhea. As a result of the diarrhea, she was losing water and Na^+ through her digestive tract.
- Indicate whether the following components (a) increase, (b) decrease, or (c) remain the same, AS A CONSEQUENCE of the diarrhea:
     _____ Blood volume
     _____ arterial blood pressure
     _____ activity of renal sympathetic nerves
     _____ kidney excretion of Na^+ and water

- Using the following code, indicate what changes need to take place in Jane's body, in order to restore her blood volume back to normal: (a) increase, (b) decrease, or (c) no change
     _____ renin secretion
     _____ plasma angiotensin II levels
     _____ aldosterone secretion
     _____ plasma ANP levels
     _____ ADH release
     _____ Na^+ reabsorption
     _____ collecting duct permeability to water
     _____ water excretion
     _____ Na^+ excretion
     _____ thirst
- Which of the above changes is the only one that can fix Jane's problem?

6) On a trip to the Grand Canyon with his friends, Dan got separated and lost for about a week (he was eventually found and is OK). During the week alone, he ran out of water after 2 days.

- How would Dan's blood osmolarity compare to normal?

- What was his blood ADH levels by the end of the week? Please explain:

- Clearly draw and describe the changes in Dan's urine profile (concentrated/ dilute) and volume (high/low) as the days of the week lost in the desert progressed: