

PAL Worksheet
Week 14 Problem Set 1

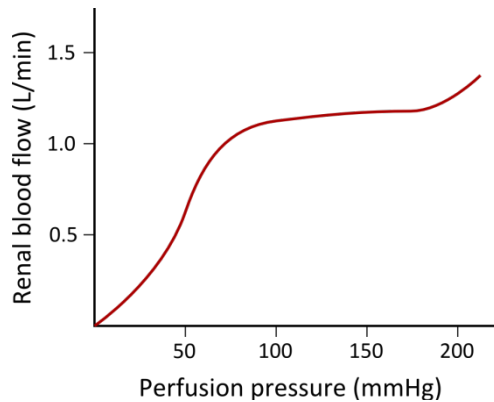
FLUID BALANCE

1. A. For the graph below, show where intrinsic (renal autoregulation) of GFR is taking place.

B. Clearly describe the two mechanisms responsible for renal autoregulation of GFR.

C. For the graph below, show where extrinsic control of GFR is taking place.

D. The goal of extrinsic GFR regulation is to _____
The goal of intrinsic GRF regulation is to _____



2. As described on the last study guide, inulin is a small substance that is freely filtered, but neither reabsorbed nor secreted, and therefore its clearance is often used as an indicator of GFR. Based on what you know about GFR regulation, which of the following is greater? Explain.
 - A. Inulin clearance when MAP is 100 mm Hg
 - B. Inulin clearance when MAP is 200 mm Hg

3. Compare the following pairs of items. Put the symbols below into the space:
Greater than > less than < same as or equal to =

A. urine osmolarity in a normal person with maximal ADH
B. urine osmolarity in a diabetic who is excreting glucose with maximal ADH A _____ B

A. aldosterone secretion when osmolarity is high and blood pressure low
B. aldosterone secretion when osmolarity and blood pressure are both low A _____ B

A. plasma PCO_2 in respiratory acidosis
B. plasma PCO_2 in respiratory alkalosis A _____ B

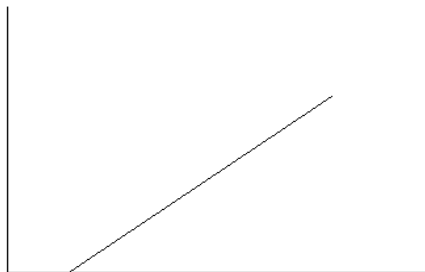
A. renal reabsorption of HCO_3^- in acidosis
B. renal reabsorption of HCO_3^- in alkalosis A _____ B

A. ventilation in metabolic alkalosis
B. ventilation in metabolic acidosis A _____ B

A. renin secretion when blood pressure is high
B. renin secretion when blood pressure is low A _____ B

A. renal filtration of HCO_3^- in acidosis
B. renal filtration of HCO_3^- in alkalosis A _____ B

4. The labels were left off the axes on the following graph. One axis is ADH concentration and one axis is plasma osmolarity. Which is which? Defend your answer.



5. For the following, make a flow chart of what triggers the release and what the effects/actions are for the following:

ADH

Renin/AngiotensinII/Aldosterone

ANP