

**p306 #12**

- a) As the hen breathes more heavily, it exhales more carbon dioxide. This means that less  $\text{CO}_2$  remains in its blood. This produces less carbonic acid, and as the carbonic acid ( $\text{H}_2\text{CO}_3$ ) concentration decreases, less carbonate is produced for the egg shells.

Hens are warm-blooded so temperature is not likely to be a factor. However, if there is an increase in body temperature that would also lower the concentration of carbon dioxide because less gas dissolves in warmer solutions (think of beer or soda).

- b) Feed them  $\text{HCO}_3^-$  which will discourage reverse reaction :  
 $\text{H}_2\text{CO}_3 = 2 \text{H}^+ + \text{CO}_3^{2-}$   
by consuming and lowering  $\text{H}^+$  and increasing  $\text{CO}_3^{2-}$  concentration.

**p338 do the example shown**(solution is there)

**p352 do the example shown**(solution is there)