Solutions 5.1

1) For an adult with a SpO_2 at 100%, an estimated blood supplies of 5l/min. What is the amount of O_2 supplied to the tissues in ml O_2/min.

    100ml blood   ->   20.7ml O_2

    5l blood   ->   1035ml O_2

    5l blood /min   ->   1035ml O_2/min

2) Knowing that the tissues need an average of 250 ml O_2/min, what is the percentage of O_2 used? What is the vein oxygen saturation? And the corresponding partial pressure?
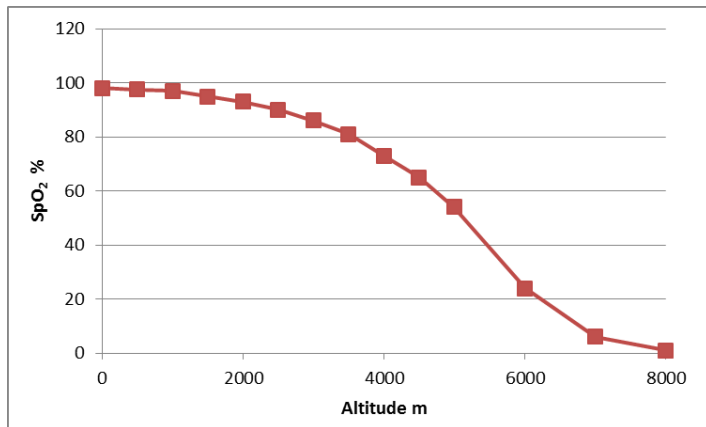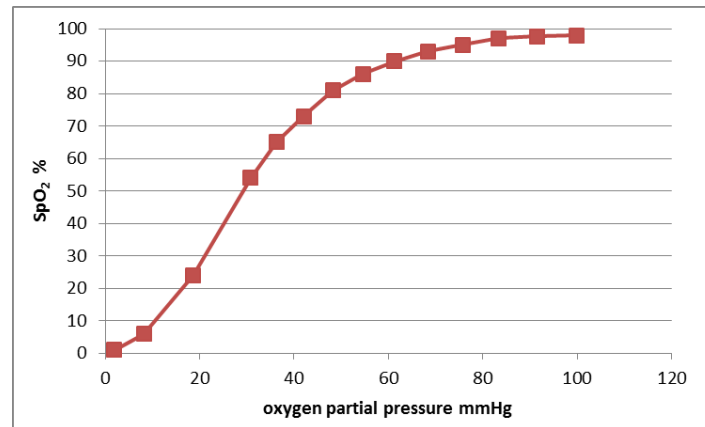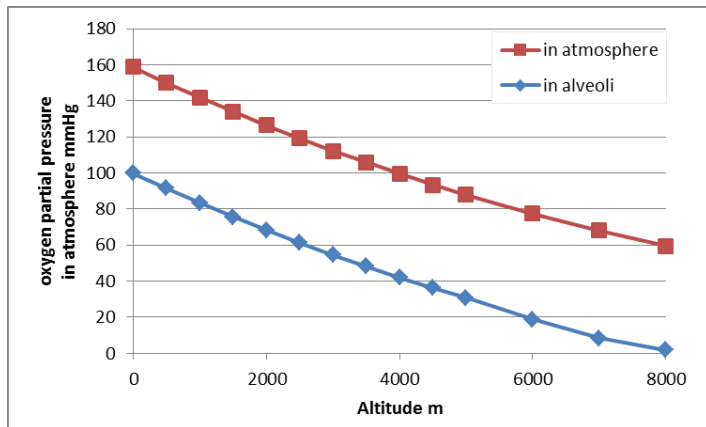
    24.1% (=250/1035) is used

    vein oxygen saturation, SvO_2= 75.9% (100%-24.1%)

    From the O_2 dissociation curve, we read a partial pressure of 40mmHg

Solutions 5.1

3) The pressure is reduced with altitude and the partial pressure of O_2 accordingly. Considering the non-linear oxidation dissociation curve, the effect is drastic.

The breathing rate or volume must be increased to keep the SpO_2 at its normal level