1.1 RED BLOOD CELL COUNT

Result:

The number of erythrocyte in each square (count in 40 small squares)

....

....

....

....

The average number of erythrocytes in a square: ....

Multiply by volume above the square $= 4.10^9$ and multiply by the dilution ratio=199

Number of red blood cells in 1 litre of blood: ....

Conclusion …………………………………..……………………………………………….
……………………………………………………………………………………………………

1.2 ESTIMATION OF HAEMOGLOBIN CONCENTRATION

Principle:
……………………………………………………………………………………………………

Results: concentration of Hb from SPEKOL in mmol/l…………. Recalculate to g/l (multiply by coefficient 16.11)…………

Add the value of Hb concentration to graph № 1. Physiological values for healthy man: 130 - 175 g/l and for healthy woman: 120 - 165 g/l (see graph – gray box).
reduced values: anemia; increased values: dehydratation, polycythaemia


Graph № 1. **Haemoglobin concentration (g/l)**

g/l	mans	woman
180		
170		
160		
150		
140		
130		
120		
110		
100		
90		
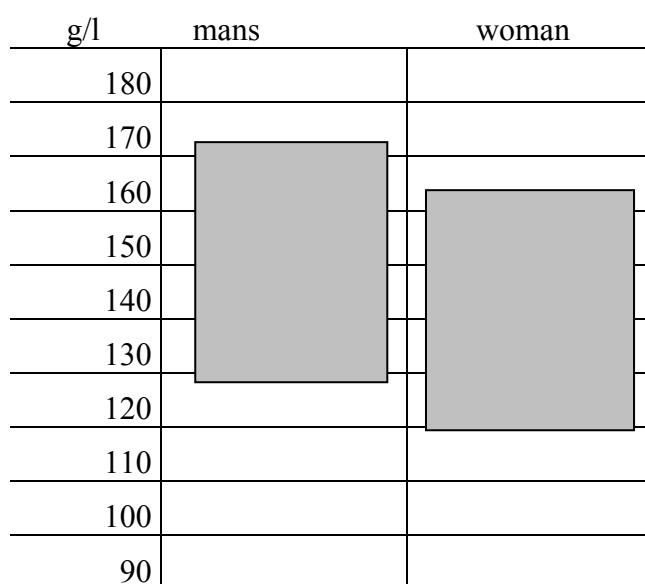
Calculated parameter: mean corpuscular haemoglobin (MCH = average weight of Hb in red blood cell): MCH=Hb/number of red blood cell

Add the value of MCH to graph № 2.

*Graph № 2. **Average weight of Hb in red blood cell**:*

34	
33	
32	
31	
30	
29	
28	
27	
26	
25	
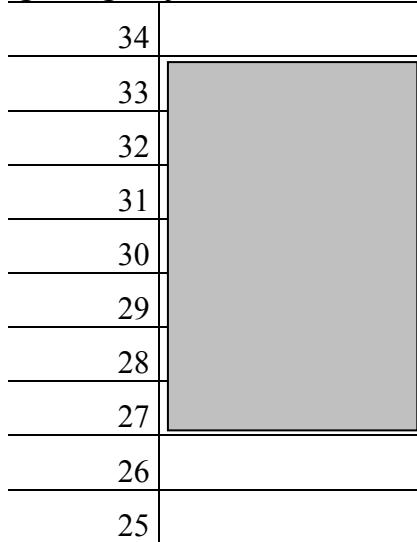
Physiological values: 27 - 33 pg (gray rectangle)

reduced values: sideropenic anemia; elevated values: hereditary spherocytosis

Conclusion:…………………………………………………………………………………………
……………………………………………………………………………………………………

2. ESTIMATION OF BLOOD GROUP BY SLIDE METHOD
Principle:
……………………………………………………………………………………………………
……………………………………………………………………………………………………

Results: Draw agglutination in schematic slides.
Blood sample no 1:
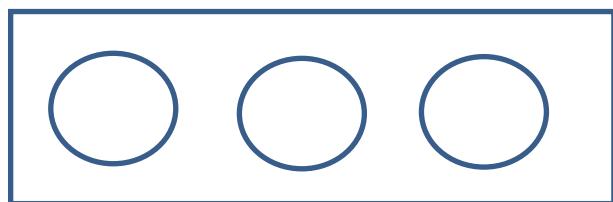
Blood group: ....

Blood sample no.2:
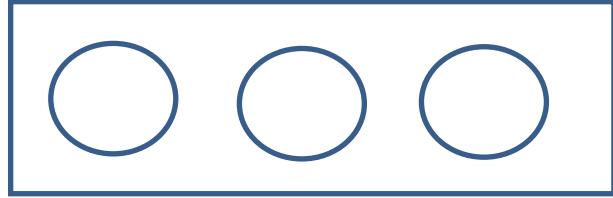
Blood group: ....

Conclusion: ………………………………………………………………………………..
……………………………………………………………………………………………………
……………………………………………………………………………………………………

3. ERYTHROCYTE SEDIMENTATION RATE

Principle:

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

Results:

Draw a graph of the time course of sedimentation in all samples (for each sample choose a different color line - crayone)

time in minutes
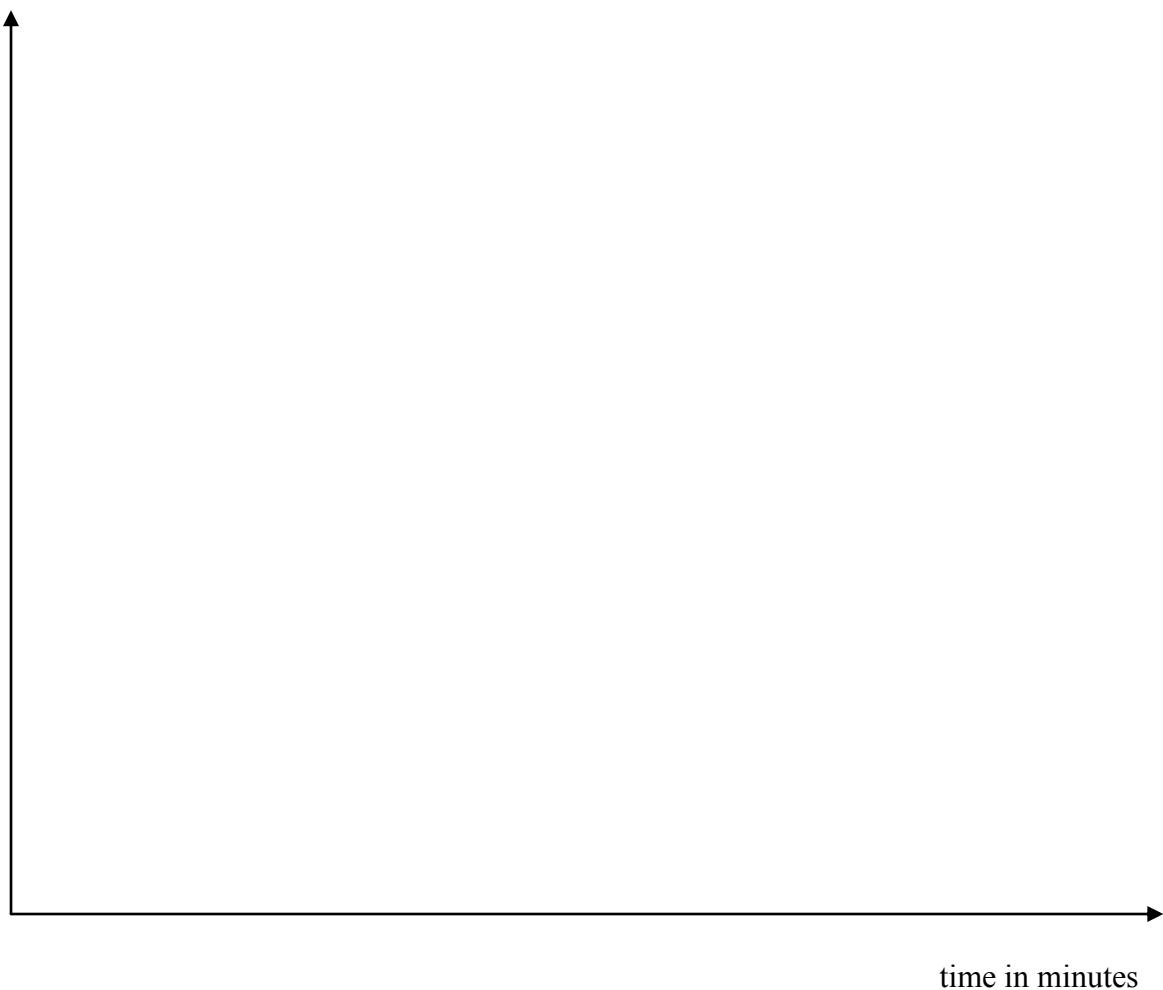
Factors influence the erythrocyte sedimentation rate (list all factors):

………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………

Conclusion:……………………………………………………………………………..

………………………………………………………………………………………

………………………………………………………………………………………

……………………………………………………………………………………..

4. ESTIMATION OF OSMOTIC RESISTANCE OF RED BLOOD CELLS

Principle:

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

Results:

	1	2	3	4	5	6	7	8	9	10	11	12	13
concentration [%NaCl]	0.9 physiol. solution	0.63	0.60	0.57	0.54	0.51	0.48	0.45	0.42	0.39	0.36	0.33	0.30
the presence of hemolysis													
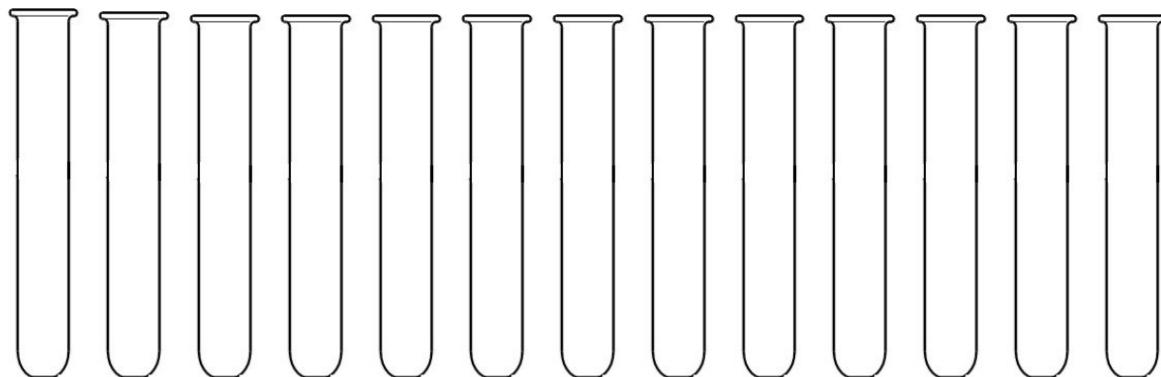
Minimal osmotic resistance ……………%NaCl
Maximal osmotic resistance ……………%NaCl
Osmotic resistance range ……………… %NaCl

Conclusion:……………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………