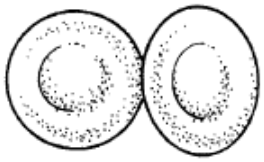
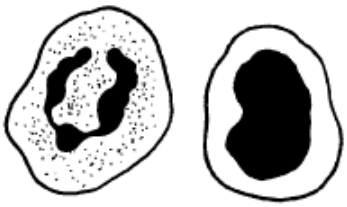
Key Area 2.6

Homework 2

1. The table gives information about components of the blood.
Use the information provided to answer the questions which following.

Appearance under a microscope (not drawn to the same scale)	*Number per mm^3 of blood*	*Diameter in millimetres*	*Additional information*
 Red blood cells	5·5 million	0·008	Made in marrow of bones. Iron essential. 2 million made each second. Last for about 4 months.
 White blood cells	8000	0·02	Made in marrow of bones or in lymph nodes. Fight infection by engulfing bacteria or producing antibodies.
 Platelets	400,000	0·003	Made in marrow. Contain proteins which form blood clots.

(a)(i) Name two places where blood cells are made.

1. _____ 2._____ PS1

(ii) Which cells are the largest? PS1

(iii) Which component is present in the greatest numbers? PS1

(iv) What type of substance is needed to form blood clots? PS1

(v) On average, how many red blood cells are made in an hour?

Space for calculation

_____Million PS1

(b) In which component of blood is most of the oxygen carried? KU1

2. (a) What is the main function of red blood cells? KU1

(b) The concentration of substances found in blood plasma is shown in the table below.

Substance	*Concentration* (g per 100 ml)
sugars	0·1
salts	0·8
proteins	6·4
fats	0·6
wastes	0·1

(i) Express the concentration of salts to proteins as a simple whole number ratio.

Space for calculation

_____:_____

salts : proteins PS1

(ii) A man has 3 litres of blood plasma (1 litre = 1000 ml).

Calculate the total mass of proteins present in his blood.

Space for calculation

_____g PS1

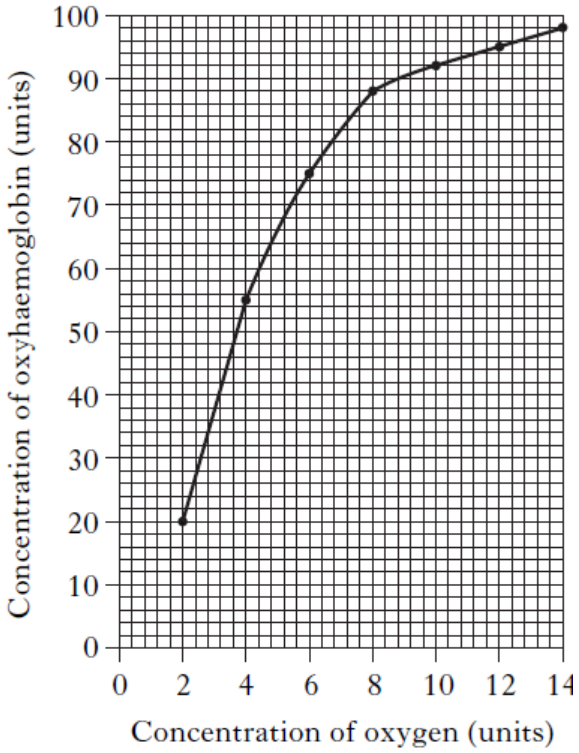
3. The graph below shows the relationship between oxygen concentration and the concentration of oxyhaemoglobin.

What is the percentage increase in the concentration of oxyhaemoglobin when the concentration of oxygen increases from 2 units to 4 units?

A 2

B 35

C 55



4. Name one difference between a cheek cell and a red blood cell.