

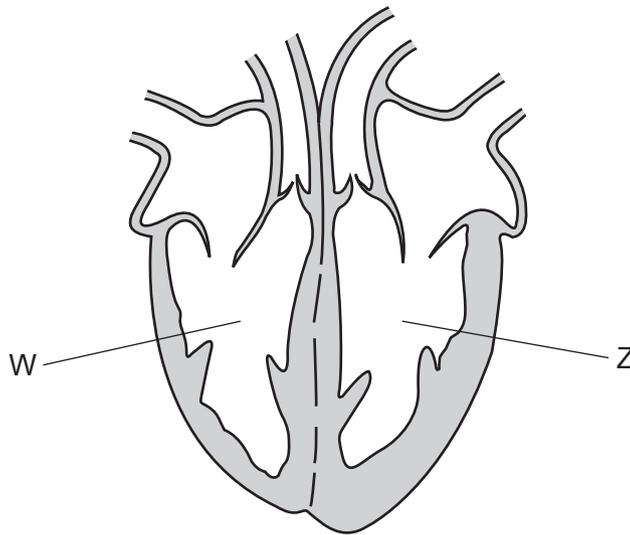
1 Which substances are dissolved in human blood plasma?

- A carbon dioxide, haemoglobin and glucose
- B carbon dioxide, oxygen and haemoglobin
- C glucose, hormones and urea
- D oxygen, urea and starch

2 Which chamber of the heart has the thickest muscle wall?

- A left atrium
- B left ventricle
- C right atrium
- D right ventricle

3 The diagram shows the human heart and some of the blood vessels connected to it.



Before blood in W reaches Z it must

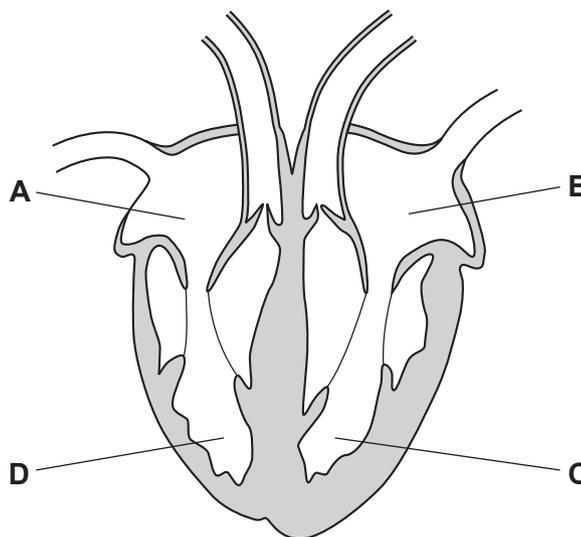
- A gain glucose.
- B give up heat to the skin.
- C pass through capillaries.
- D travel to the head.

4 Which blood vessel has a high carbon dioxide concentration, a low oxygen concentration and a high blood pressure?

- A aorta
- B pulmonary artery
- C pulmonary vein
- D vena cava

5 The diagram shows a section through the heart.

Which part pumps blood to the aorta?



6 The diagram shows a section through a blood vessel in the leg.



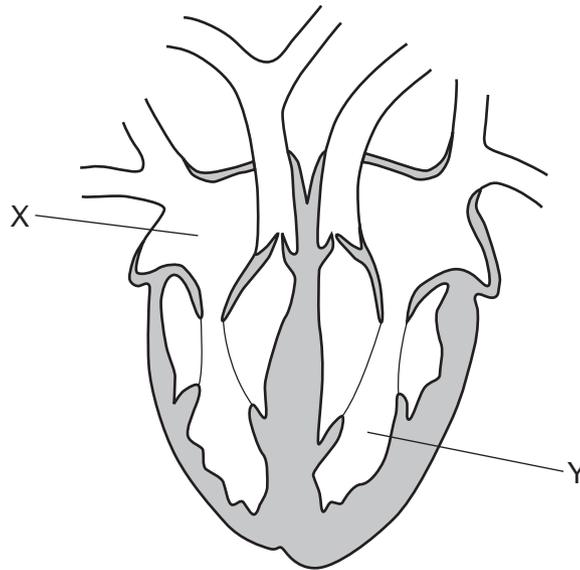
Which type of blood vessel is shown, and in which direction does the blood flow?

	type of vessel	direction of flow
A	artery	P to Q
B	artery	Q to P
C	vein	P to Q
D	vein	Q to P

7 Which statement is correct for **most** veins in the human body?

- A They carry blood at high pressure.
- B They have a pulse.
- C They have valves.
- D They take blood away from the heart.

8 The diagram shows a vertical section through a human heart.

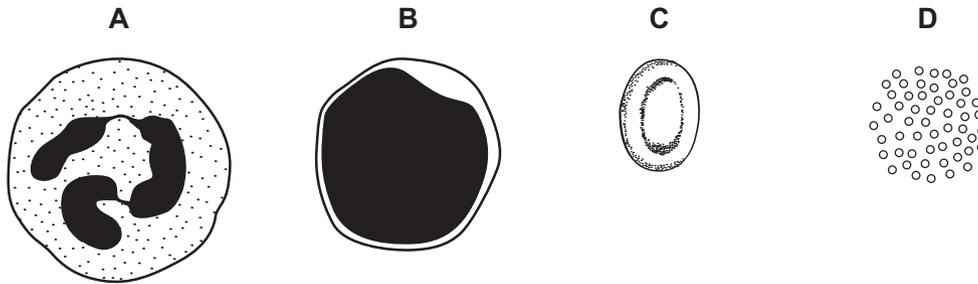


What are X and Y?

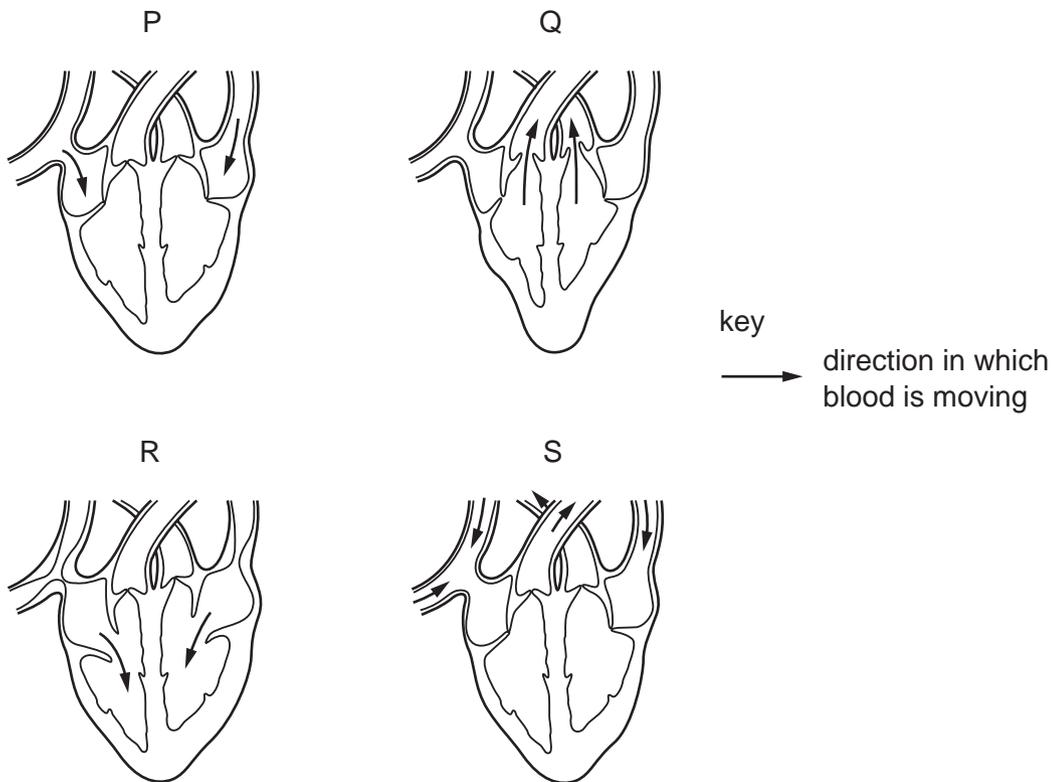
	X	Y
A	left atrium	right ventricle
B	left ventricle	right atrium
C	right atrium	left ventricle
D	right ventricle	left atrium

9 The diagrams show some components of the blood of a mammal.

Which component causes the blood to start clotting?



10 The diagrams show four different stages in **one** heart beat.



What is the correct order for the stages after stage P?

- A Q → R → S
- B R → Q → S
- C R → S → Q
- D S → R → Q

11 Where does haemoglobin become oxyhaemoglobin?

- A heart
- B kidneys
- C liver
- D lungs

12 What is the correct sequence for blood being pumped from the heart to the lungs?

- A left atrium → left ventricle → pulmonary artery
- B left atrium → left ventricle → pulmonary vein
- C right atrium → right ventricle → pulmonary artery
- D right atrium → right ventricle → pulmonary vein

13 Which structures in plants and in humans normally carry amino acids?

	arteries	phloem	ureters
A	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✗
D	✗	✗	✓

14 Why is the circulatory system of mammals described as a double circulation?

- A Blood flows firstly through arteries and then through veins.
- B Blood flows through the heart twice on one complete circuit of the body.
- C In the heart, blood flows firstly through atria and then through ventricles.
- D The atria and the ventricles contract alternately.

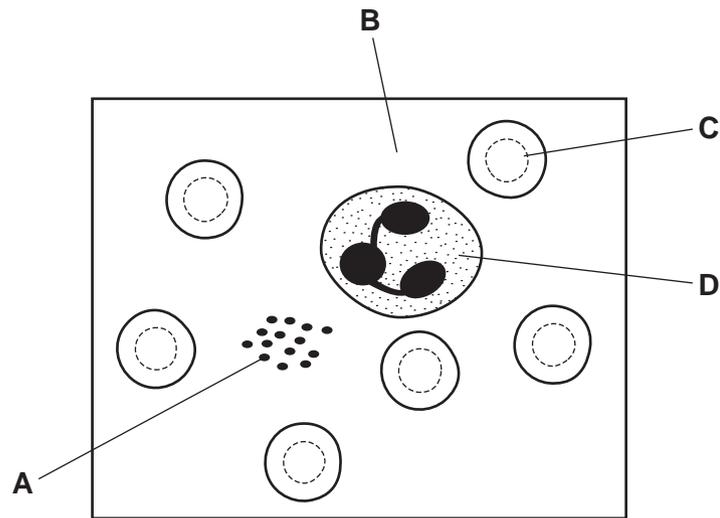
15 Which substance is transported by haemoglobin?

- A nitrogen
- B oxygen
- C urea
- D water

16 The diagram shows human blood as seen through a light microscope.

A person's blood is unable to clot.

Which component of the blood is **not** functioning properly?



17 In which list do all three blood vessels carry oxygenated blood?

- A aorta, pulmonary artery, renal artery
- B aorta, pulmonary vein, renal artery
- C vena cava, pulmonary artery, renal vein
- D vena cava, pulmonary vein, renal vein

18 In a person with a low platelet level, which process is slower than normal?

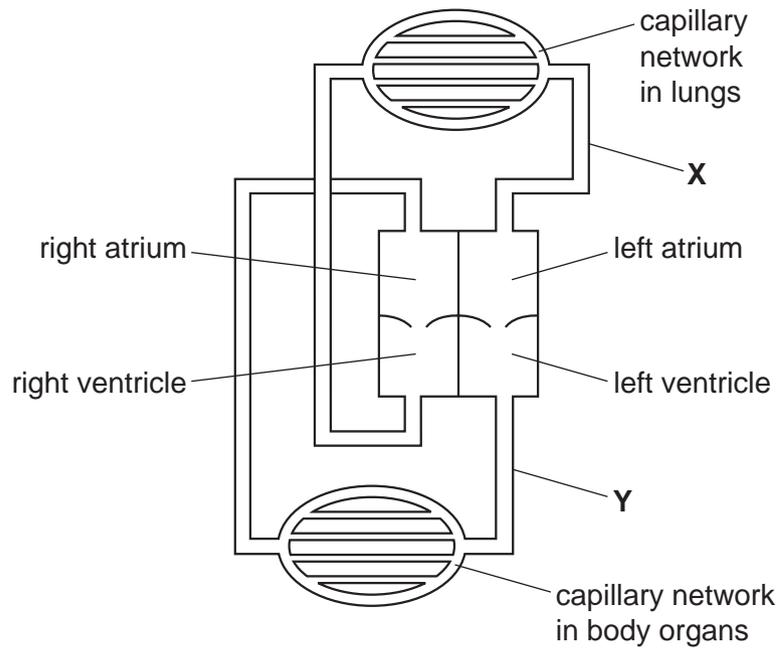
- A antibody formation
- B blood clotting
- C oxygen carriage
- D phagocytosis

19 Which blood vessel contains valves?

- A arteriole
- B capillary
- C renal artery
- D renal vein

- 20 When blood is flowing through a vena cava, which main blood vessel will it flow through next?
- A hepatic portal vein
 - B hepatic vein
 - C pulmonary artery
 - D pulmonary vein
- 21 How does insulin move from the pancreas, where it is produced, to the cell where it acts?
- A along nerves
 - B in the blood
 - C through the digestive system
 - D through the pancreatic duct
- 22 Which heart valves are open and which are closed when blood passes out of the right ventricle towards the lungs?
- A bicuspid (mitral) valve closed, tricuspid valve open
 - B bicuspid (mitral) valve open, semi-lunar valve closed
 - C tricuspid valve closed, semi-lunar valve open
 - D tricuspid valve open, bicuspid (mitral) valve open

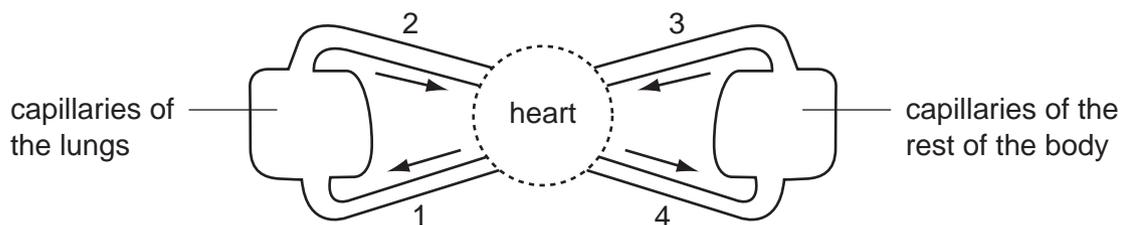
23 The diagram shows the circulatory system of a mammal.



What describes the blood in vessels **X** and **Y**?

	X	Y
A	deoxygenated	deoxygenated
B	deoxygenated	oxygenated
C	oxygenated	deoxygenated
D	oxygenated	oxygenated

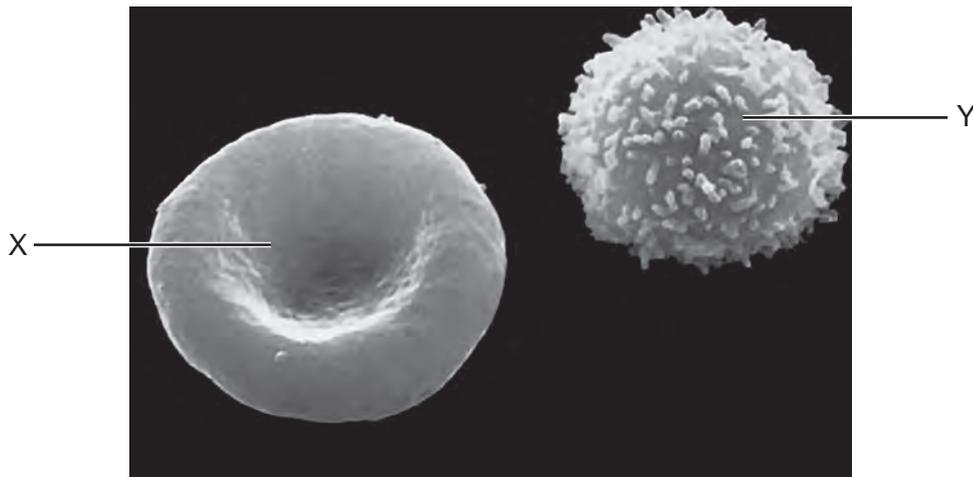
24 The diagram shows a double circulatory system.



Which vessels carry oxygenated blood?

- A** 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 2 and 4

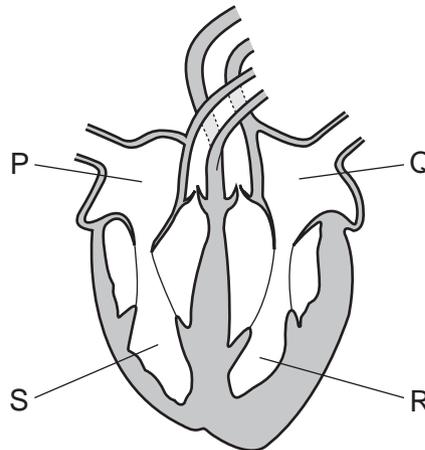
25 The photograph shows two blood cells, X and Y.



What are the functions of cells X and Y?

	cell X	cell Y
A	carries out phagocytosis	carries oxygen
B	carries oxygen	produces antibodies
C	carries oxygen	carries carbon dioxide
D	produces antibodies	carries oxygen

26 The diagram shows the human heart.



In which order does blood pass through the chambers during a complete circuit of the body after it returns from the lungs?

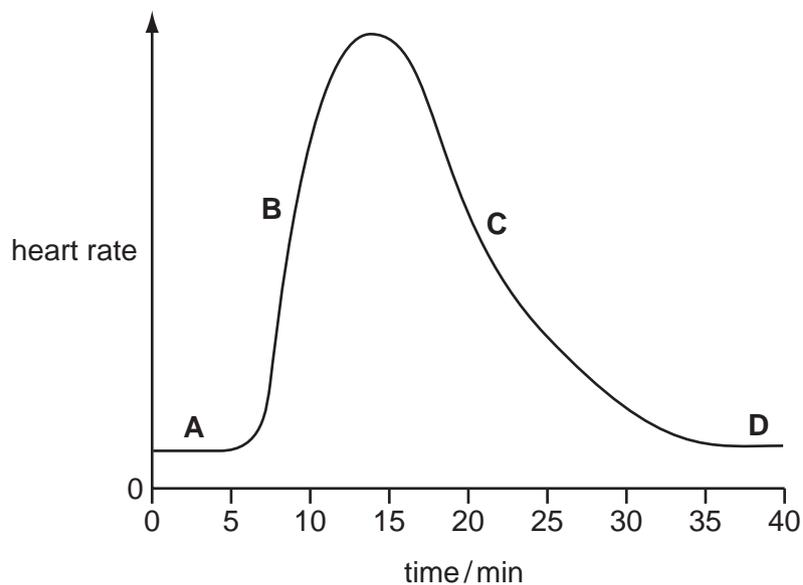
- A** Q → R → S → P
- B** Q → R → P → S
- C** P → S → Q → R
- D** P → S → R → Q

27 What shows the sequence of organs through which urea passes as it travels from where it is produced to where it is removed from the blood?

- A kidneys → heart → lungs → heart → liver
- B kidneys → heart → liver → lungs → heart
- C liver → heart → lungs → heart → kidneys
- D liver → lungs → heart → kidneys → heart

28 The graph shows the effect of several minutes of vigorous (hard) exercise on heart rate.

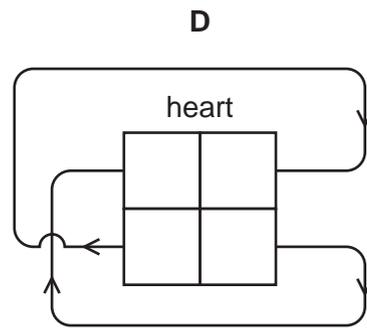
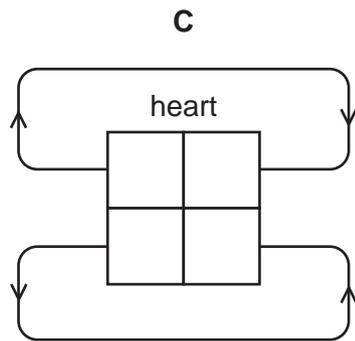
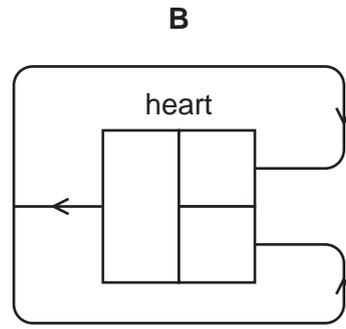
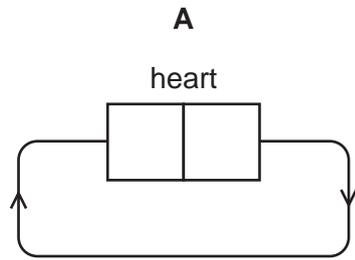
Which letter on the graph is at a time when the person is doing this exercise?



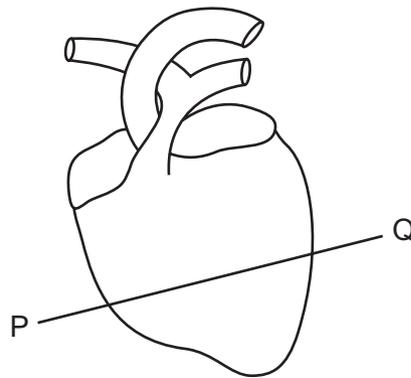
29 Which blood vessel, if it becomes blocked, could lead **directly** to a heart attack?

- A coronary artery
- B pulmonary artery
- C pulmonary vein
- D vena cava

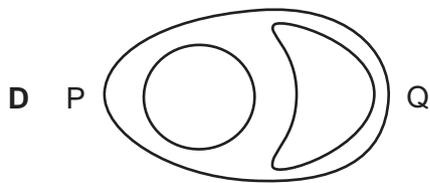
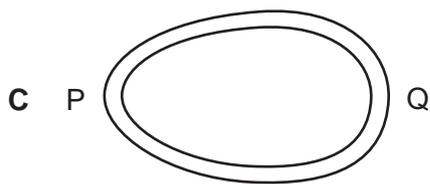
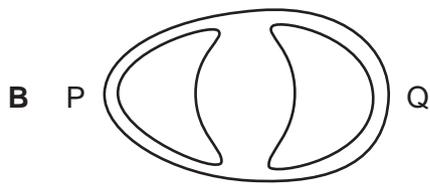
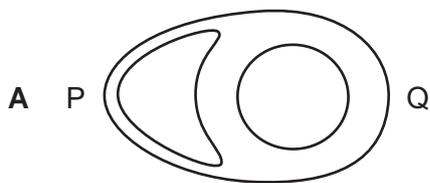
30 Which diagram shows the human double circulatory system?



31 The diagram shows the heart as seen from the front.



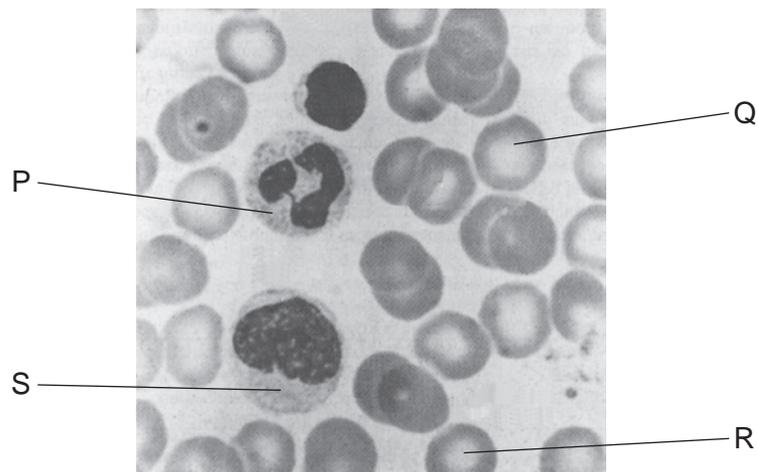
Which section shows the heart cut through line P-Q?



32 What is the characteristic feature of a double circulation?

- A** In each circuit, blood passes from the gut to the liver before going back to the heart.
- B** In each circuit, blood passes from the heart to the lungs and then back to the heart before going to other parts of the body.
- C** In each circuit, blood passes through atria and ventricles before going to other parts of the body.
- D** In each circuit, blood passes through the arteries and the capillaries before returning to the heart in veins.

- 33 Which group contains substances that are **all** carried in the blood?
- A** amino acids, carbon dioxide and cellulose
B glucose, glycogen and lactic acid
C oestrogen, oxygen and starch
D salts, testosterone and urea
- 34 How often must a blood cell in the renal artery pass through the heart before it again reaches the renal artery?
- A** once
B twice
C three times
D four times
- 35 The photograph shows human blood cells as seen under a microscope at high power.

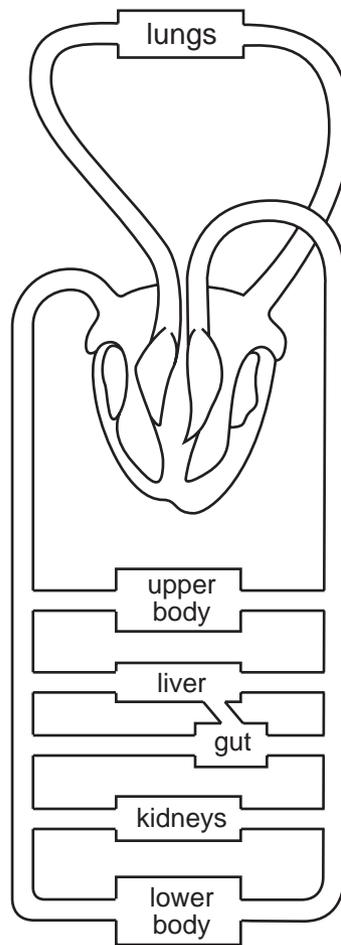


Which are red cells?

- A** P and Q **B** Q and R **C** R and S **D** S and P
- 36 What describes the aortic (semi-lunar) and bicuspid (mitral) heart valves when the left ventricle is relaxing?

	aortic valve	bicuspid valve
A	closed	closed
B	closed	open
C	open	closed
D	open	open

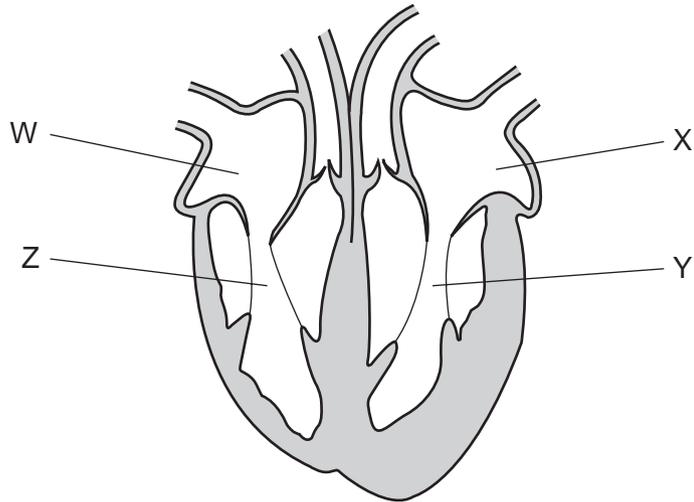
37 The diagram shows the blood circulatory system of a human.



How many times does the blood pass through the heart on its way from the kidneys to the aorta?

- A one
- B two
- C four
- D more than four

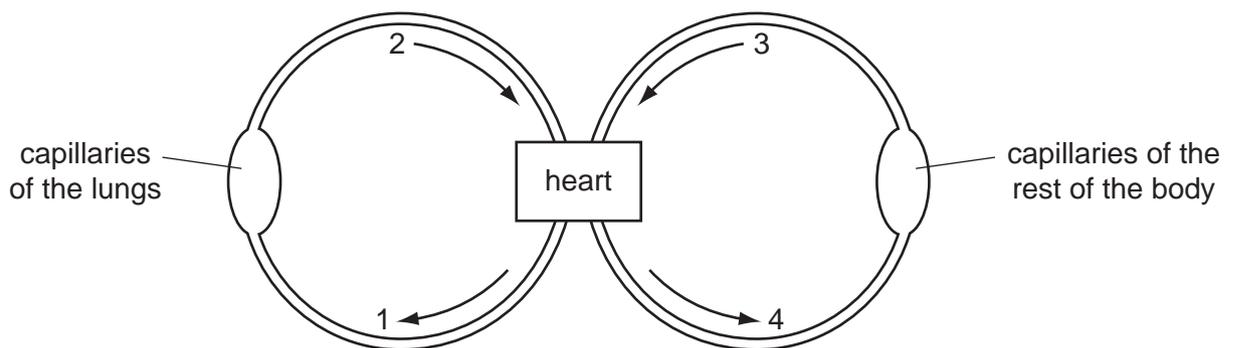
38 The diagram shows the human heart.



Which two chambers contract at the same time?

- A** W and X **B** W and Z **C** X and Z **D** X and Y

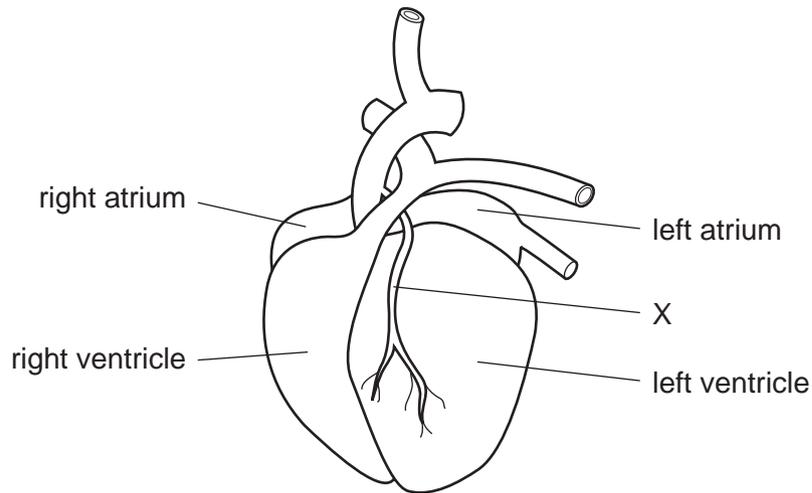
39 The diagram shows a double circulatory system.



Which two vessels carry blood at the highest pressure?

- A** 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 2 and 4

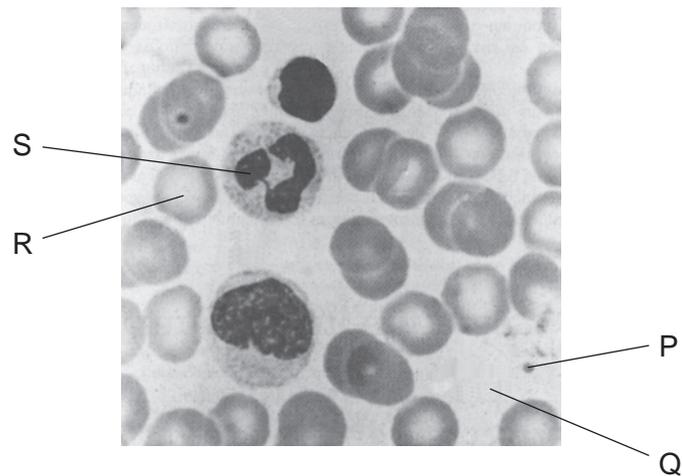
40 The diagram shows an external view of the human heart.



What is the name of the blood vessel labelled X?

- A coronary artery
- B hepatic artery
- C pulmonary artery
- D renal artery

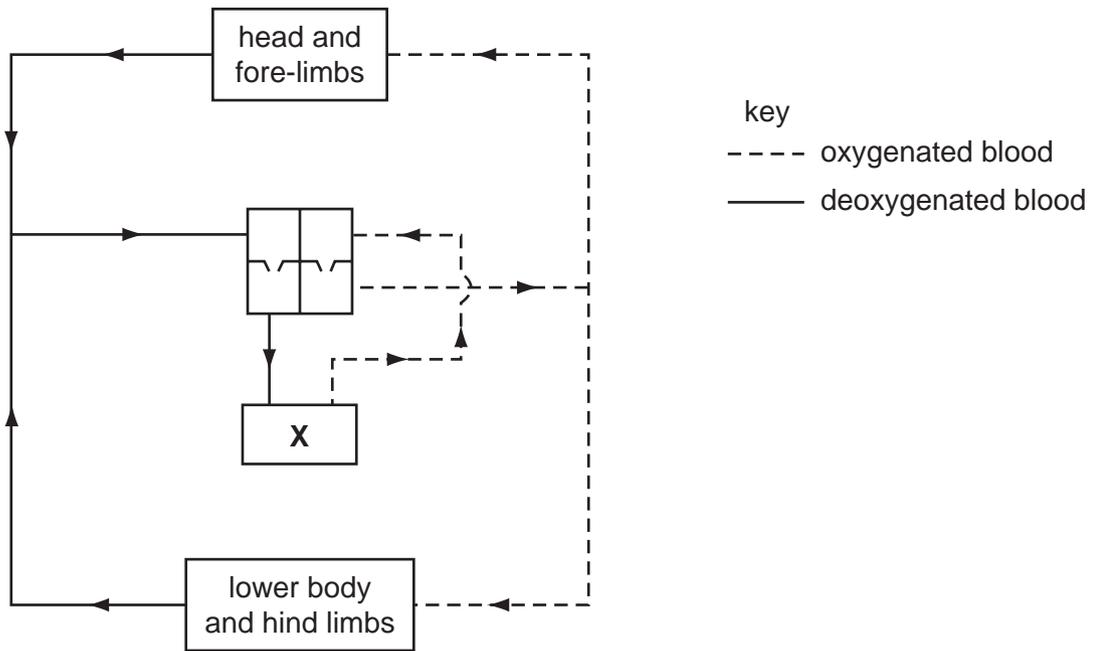
41 The diagram shows blood as seen under a microscope.



Which identifies parts P, Q, R and S of the blood?

	plasma	platelet	white blood cell	red blood cell
A	P	Q	R	S
B	Q	P	S	R
C	R	S	Q	P
D	S	R	P	Q

42 The plan shows the blood system of a mammal.

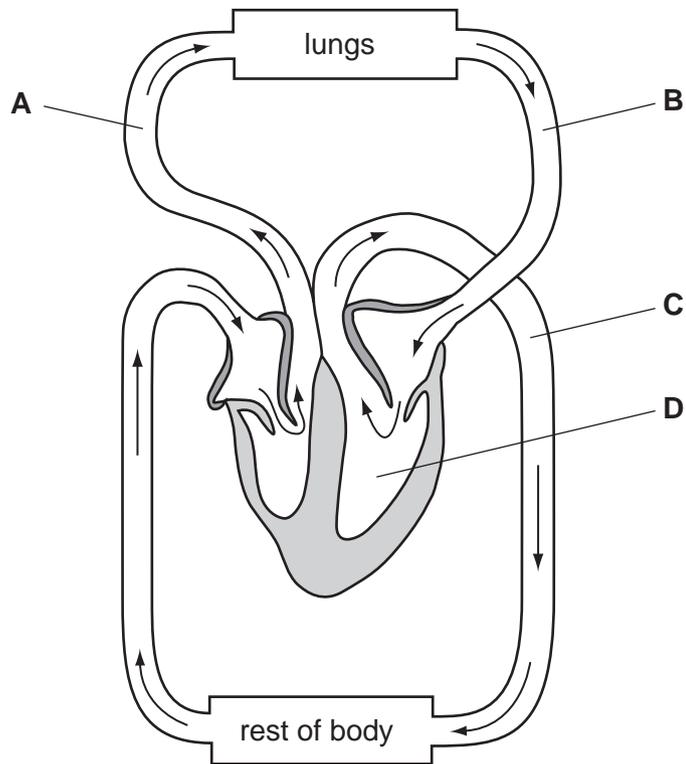


What does the part labelled **X** represent?

- A** heart
- B** kidneys
- C** liver
- D** lungs

43 The diagram shows part of the human circulatory system.

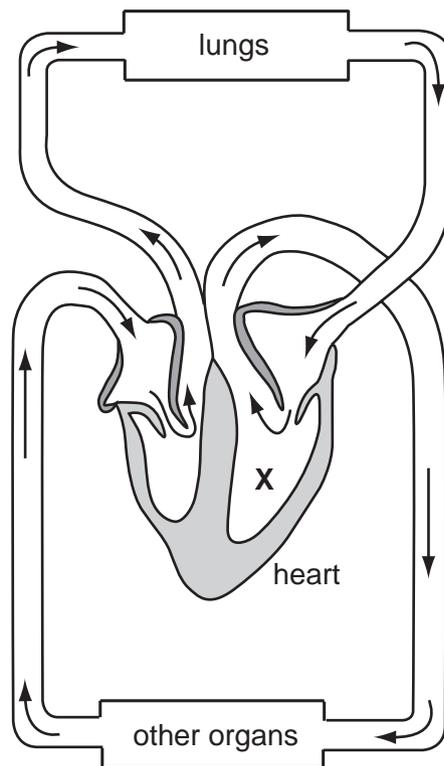
Which part carries oxygenated blood at low pressure?



44 What is a function of the human blood system?

- A** carrying eggs from the ovary to the uterus
- B** carrying glucose from the gut to the liver
- C** carrying partly digested food from the mouth to the stomach
- D** carrying urine from the kidney to the bladder

45 The diagram shows the circulation of blood in the body, through the heart, lungs and other organs.



What is the name of **X**?

- A** left atrium (auricle)
- B** right atrium (auricle)
- C** left ventricle
- D** right ventricle