Name _____ **Class** _____ **Date** _____

1 Name **two** sources of light.

_____

_____

(Total for Question 1 = 2 marks)

2 These sentences explain why you have a shadow on a sunny day.
Complete the sentences using words from the box.

absorbed	curved	opaque	straight	translucent	transmitted
transparent	wavy				

Light travels in _____ lines. Your body is _____ so light hitting your body is _____ or reflected. The light is not _____ through your body.

(Total for Question 2 = 4 marks)

3 Materials can be opaque, translucent or transparent.

(a) What does 'transparent' mean? Tick **one** box.

☐ **A** It transmits light.

☐ **B** It absorbs all light.

☐ **C** Some light is absorbed and the rest is reflected.

☐ **D** Light is scattered as it passes through.

(1)

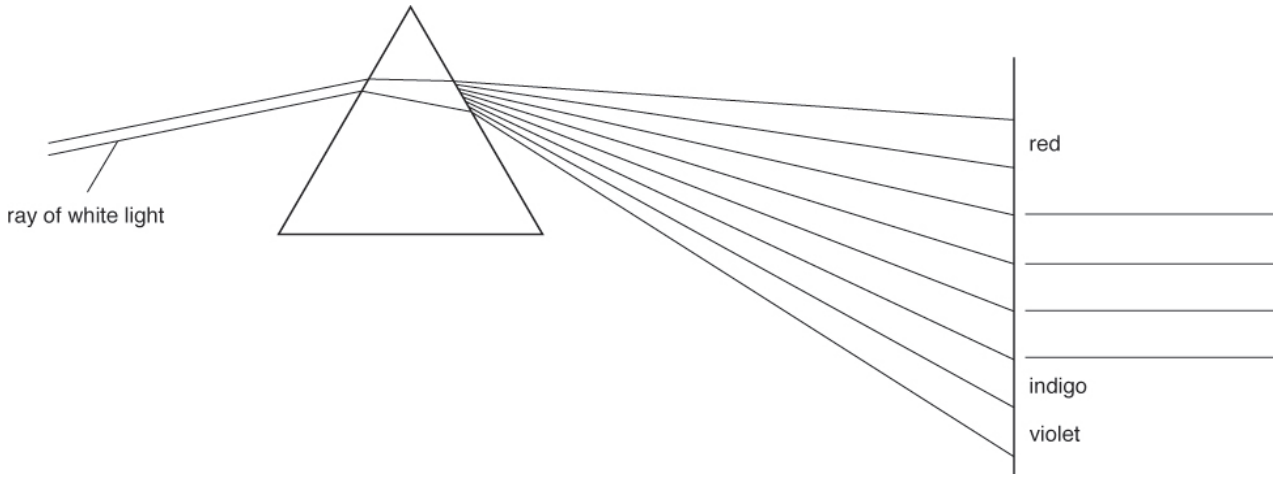
(b) How is a **translucent** material different from a **transparent** material? Tick **one** box.

- ☐ **A** A translucent material transmits light.
- ☐ **B** A translucent material absorbs all light.
- ☐ **C** A translucent material absorbs some light and the rest is reflected.
- ☐ **D** A translucent material scatters light as it passes through.

(1)

(Total for Question 3 = 2 marks)

4 The diagram below shows a ray of white light passing through a prism and forming a spectrum on a white screen.



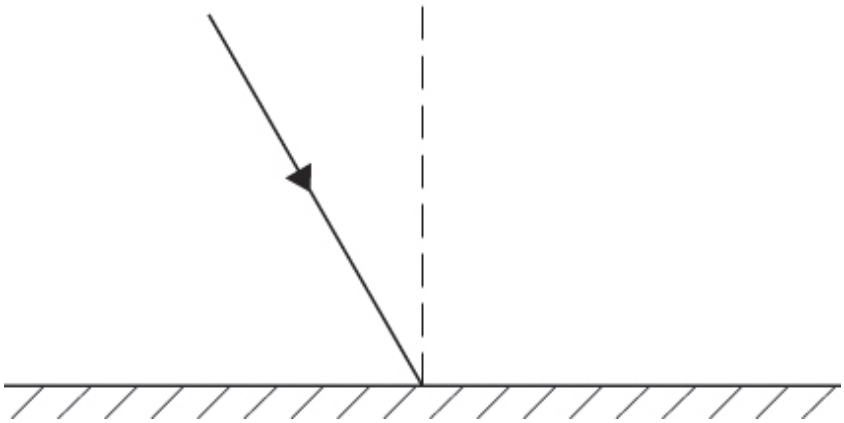
Complete the labels for the four missing colours in the spectrum.

(Total for Question 4 = 2 marks)

5 A woman is reading a book. Draw a light ray on the drawing to show how she sees the book. Draw arrows on your light ray to show the direction the light is travelling.

(Total for Question 5 = 1 mark)

6 (a) The diagram below shows a plane mirror and a ray of light hitting the mirror. Complete the diagram by drawing the reflected ray on the diagram.



(1)

(b) Look at the diagram in part (a). What is the name of the dashed line at right angles to the mirror? Tick **one** box.

- ☐ **A** the reflected ray
- ☐ **B** the incident ray
- ☐ **C** the normal
- ☐ **D** the refracted ray

(1)

(c) A piece of paper does not reflect light in the same way as a mirror reflects light.

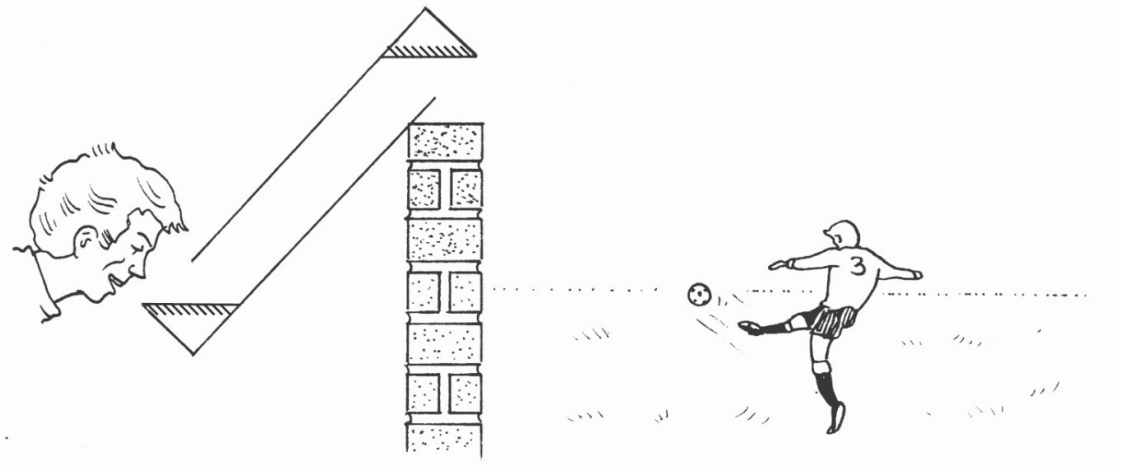
What happens to light when it hits a piece of paper and is reflected? Tick **one** box.

- ☐ **A** All the rays are reflected in the same direction.
- ☐ **B** The light is scattered in many different directions.
- ☐ **C** The light rays are reflected along the normal.
- ☐ **D** The light is reflected back towards the mirror.

(1)

(d) Two plane mirrors can be used in a piece of equipment called a periscope.

Draw a ray of light on the diagram to show how the person using the periscope can see the ball.



(2)

(e) Describe **one** different use for a plane mirror.

_____

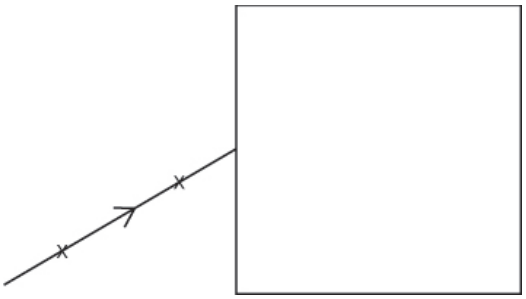
_____

(1)

(Total for Question 6 = 6 marks)

7 A student shines a ray of light towards a glass block. He draws a cross at two points along the ray and then uses the crosses to help him draw a straight line showing the ray of light.

The diagram shows what he did.



(a) Give **one** reason why the student used the crosses to mark the ray of light, instead of drawing along the ray.

_____

_____

(1)

(b) As the ray of light goes into the glass block and out of the glass block, the ray changes direction.

Complete the ray of light on the diagram above to show what happens when the light goes **into** the glass block and comes **out of** the glass block.

(2)

(c) Give **one** reason why the ray of light changes direction when it enters the glass block.

_____

(1)

(d) Name the effect of light changing direction as it moves from air into glass.

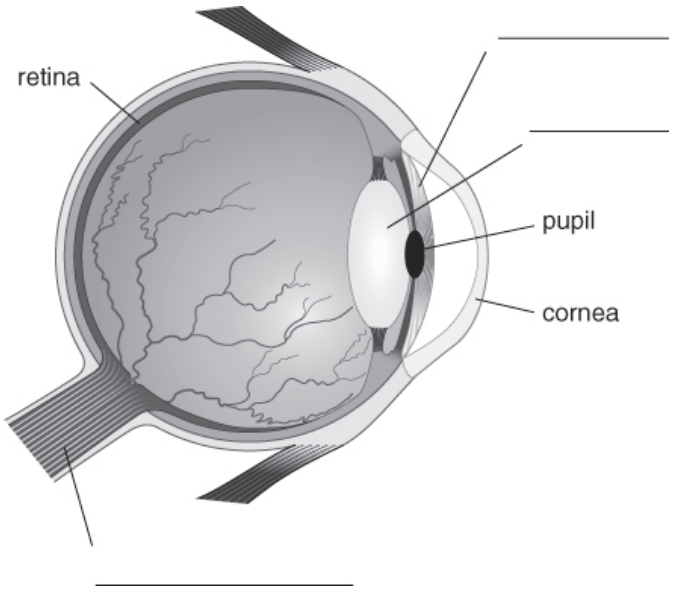
_____

(1)

(Total for Question 7 = 5 marks)

8 The diagram shows a human eye.

(a) Complete the three missing labels.



(3)

(b) The retina contains rod cells and cone cells. There are three types of cone cell. Each type of cone cell detects one of the primary colours of light.

What are the three colours that cone cells detect? Tick **one** box.

- ☐ **A** yellow, green, blue
- ☐ **B** red, green, blue
- ☐ **C** red, yellow, blue
- ☐ **D** magenta, yellow, cyan

(1)

(c) Describe the functions of **three** different parts of the eye.

_____

_____

_____

(3)

(Total for Question 8 = 7 marks)

9 A student puts a red filter in a beam of white light. What happens to the light that hits the filter? Tick **one** box.

- ☐ **A** Red light is transmitted and all the other colours are absorbed.
- ☐ **B** Red light is absorbed and all the other colours are transmitted.
- ☐ **C** White light is transmitted and red light is absorbed.
- ☐ **D** Red light is reflected and all the other colours are absorbed.

(Total for Question 9 = 1 mark)