

Mock Exam

GSA

QUESTION 6

a) washing machine depreciates at 10% each year

Current value \rightarrow ^{Rs-} 8748, price before 3 year

$$\text{year 1} \rightarrow x \times 0.1 \rightarrow 0.1x$$

$$x - 0.1x = 0.9x \rightarrow \text{first year value}$$

$$0.9x \times 0.1 = 0.09x$$

$$0.9x - 0.09x = 0.81x \rightarrow \text{second year value}$$

$$0.81x \times 0.1 = 0.081x$$

$$0.81x - 0.081x = 0.729x$$

$$0.729x = 8748$$

$$\boxed{x = \text{Rs. } 12000} \rightarrow \text{value before 3 years}$$

b) Let father be x
daughter be y

Present age $x = 4y$

after 5 years $= x + 5 = 3(y + 5)$

$$x + 5 = 3y + 15$$

$$x - 3y = 15 - 5 \rightarrow x - 3y = 10 \rightarrow i$$

Put present ages in eq i

$$4y - 3y = 10$$

$$y = 10 \rightarrow \text{Present age child}$$

$$x = 4(10) \rightarrow 40 \rightarrow \text{Present age father}$$

After 5 year father would be $40 + 5 = 45$

daughter would be $10 + 5 = 15$

After another 5 years, adding 5 in both ages, daughter and father will be 20 and 50.

hence $50/20 \rightarrow \boxed{2.5}$ times, father is older than daughter.

y: _____

Date: _____

c) volume of sphere = $\frac{4}{3} \pi r^3$

radius = $\frac{\text{diameter}}{2}$

12 \rightarrow 6 radius of football

$$\frac{4}{3} \left(\frac{22}{7}\right) (6)^3 = \frac{4}{3} \left(\frac{22}{7}\right) (216)$$

$$\begin{array}{r} 72 \\ \times 4 \\ \hline 288 \end{array}$$

$$4(3.142)(72) \rightarrow 288 \times 3.142$$

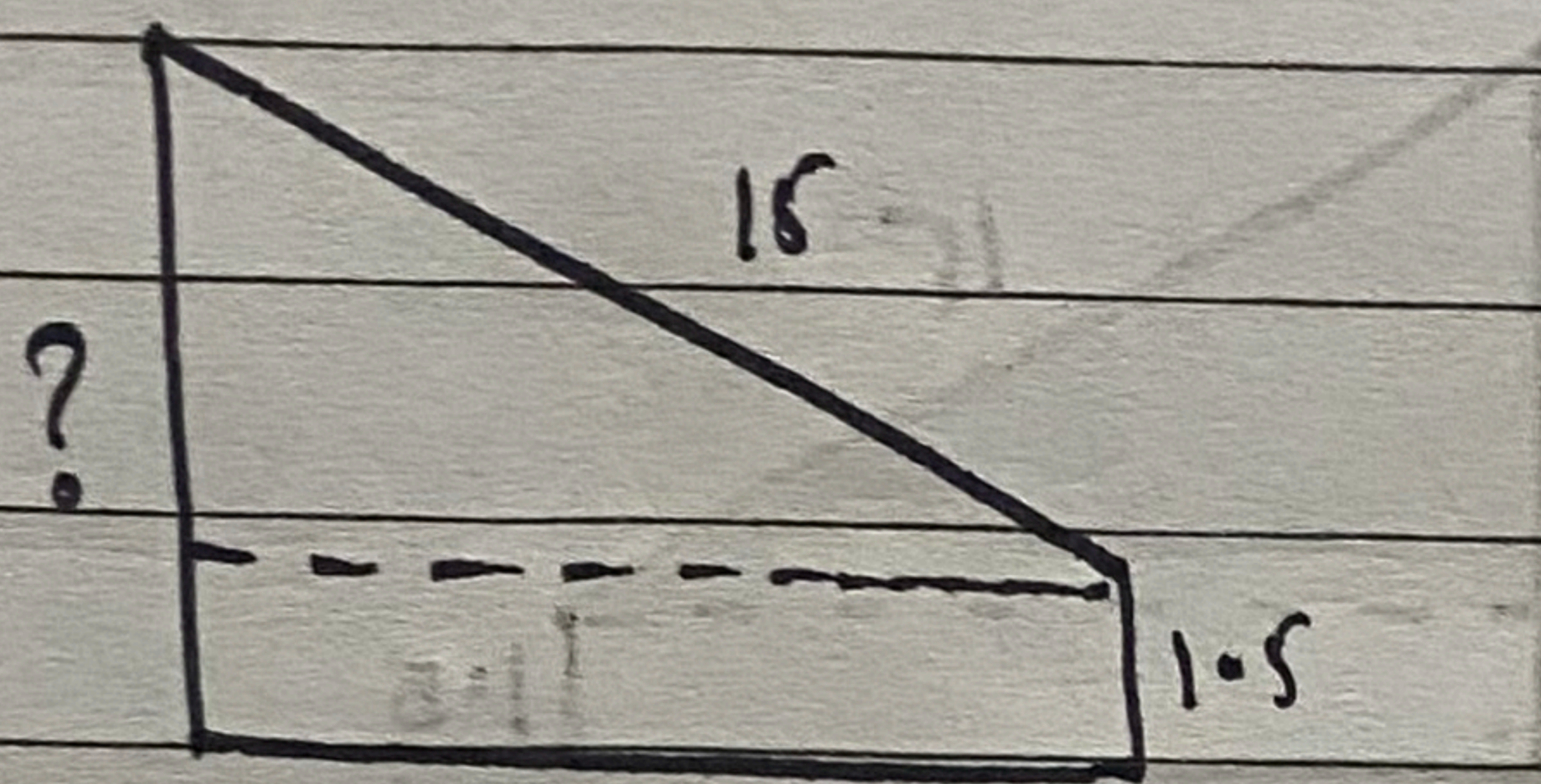
$$\text{Volume} = \boxed{904.896 \text{ cm}^3}$$

$$\begin{array}{r} 288 \\ \times 3.142 \\ \hline 0576 \\ 01152 \times \\ 0288 \times \times \\ 864 \times \times \times \\ \hline 904.896 \end{array}$$

d)

Question 8

a)



$$H^2 = B^2 + P^2$$

$$15^2 = 10^2 + P^2$$

$$225 - 100 = P^2$$

$$125 = P^2$$

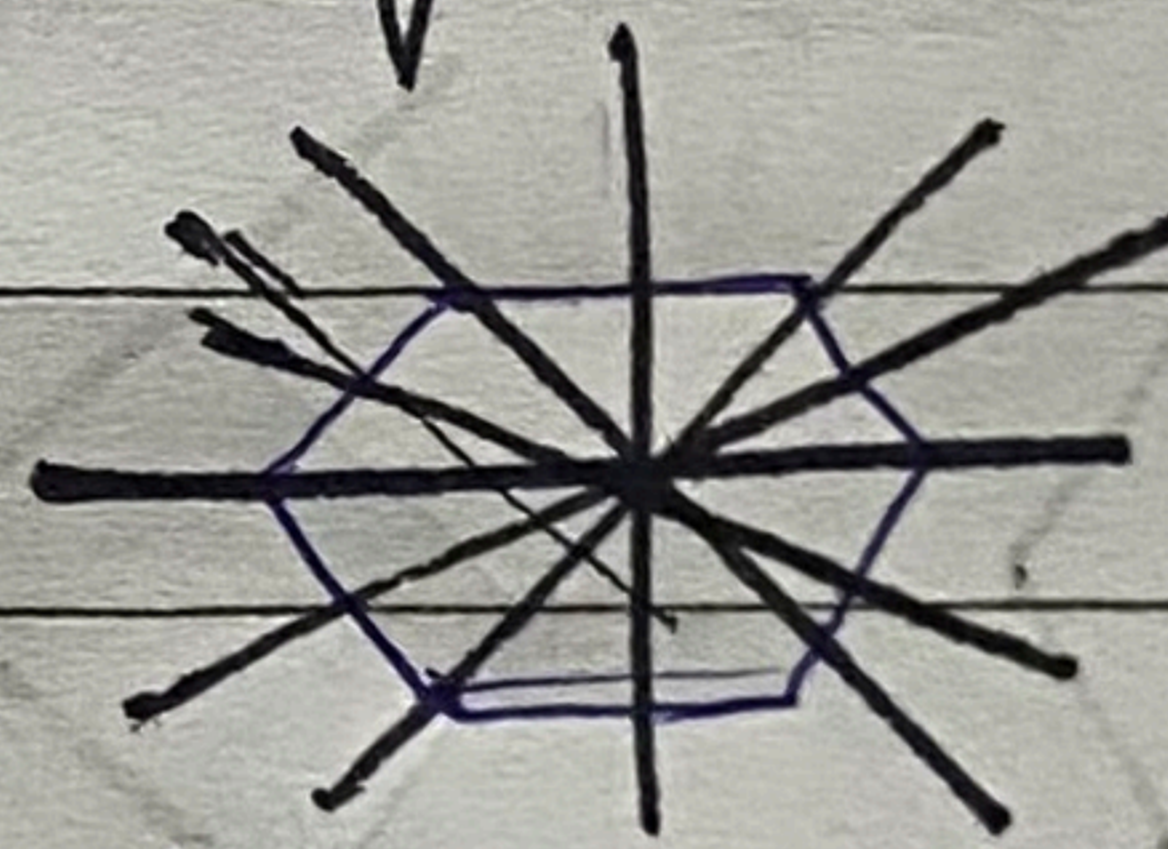
$$P = 11.2$$

$$11.2 + 1.5 = \boxed{12.7 \text{ meters}} \text{ height of tree}$$

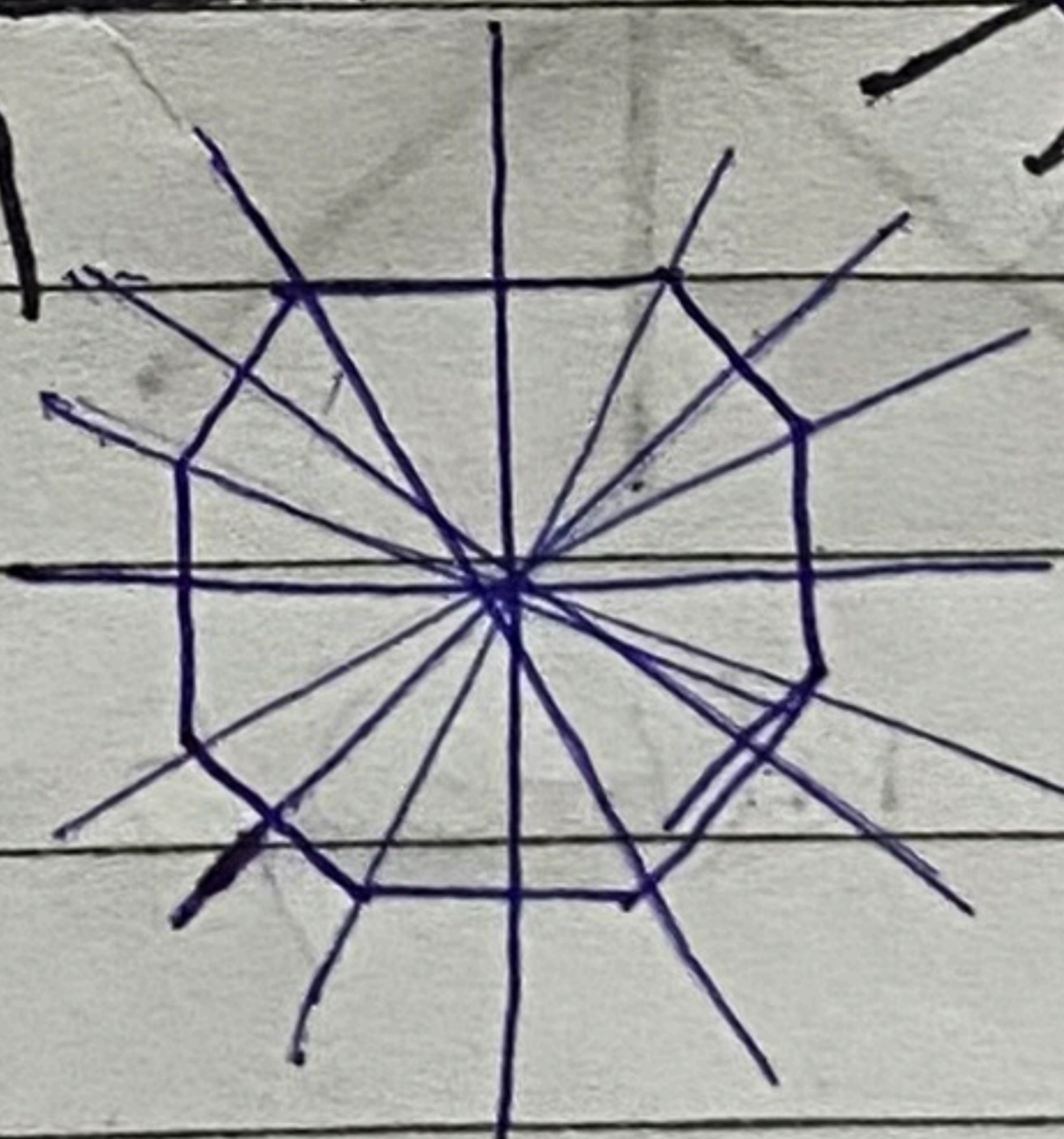
b) ~~diagonals~~

Line of symmetry = equals number of sides

hexagon → 6 lines
 octagon → 8 lines



Circle → infinite
 lines as they're
 multiple points
 to cut it from
 half because it has
 no corners



Polygon are folded
 by corners and can
 be folded from the
 center of each side.

d) Pyramid = base area \times h \times $\frac{1}{3}$

$$\text{base area} = 7 \times 5 = 35$$

$$35 \times 10 \times \frac{1}{3} = \boxed{116.67 \text{ cm}^3}$$

Question 4

Define

a) What is a Solar system

d) Cop 29 targets to limit temperature rise upto 1.5°C

Yes, Cop 29 targets to limit temperature rise upto 1.5°C because beyond this temperature, it would severely harm the human life and all living organisms. Although, it still is but beyond 1.5°C would ~~exaggerated~~ accelerate the devastation. Hence, Cop 29 is targetting to limit it, where developing countries are asking for climate finance for climate resilience.

a) Define Solar system

Our Solar system lies in the Milky way Galaxy. It has a sun, which is a star, revolved ^{around} by 8 planets and majority of planets are revolved ^{nature} by ~~around~~ by satellites. Earth is the planet where we ~~live~~ live on the natural satellite revolving around earth is moon. Earth has a mass of 6×10^{24} kg, and gravity of 9.8 m/s^2 . Moreover, the mass of sun is 2×10^{30} kg and gravity of sun is 274 m/s^2 . Sun is a source of heat and energy for earth, which is revolving around it in an elliptical orbit.

Importance of Pituitary gland

Pituitary gland is the master gland of the body, as ~~#~~ because of this major body functions are happening. Located in the hypothalamus part of human brain.

It releases multiple hormones including Somatotrophic hormone, thyroid stimulating hormone, Adrenocorticotropic hormone, Gonadotrophic hormone, Prolactin etc.

All of these hormones further works for either growth or reproduction.

Define RAM: Random Access memory, non-permanent memory/storage

ROM: Read only memory, it is the permanent memory of device.

Nibble:

USB: Universal serial Bus, it is a data storage device.

Mother board: It is the main component that is essential for computer working, CPU precisely, all other components are embedded on it. It is the main circuit.

Question 2

Explain

a) Smog and give times

Smog is a product of fog plus smoke. It is a mixture of these two that is concentrated in the air making it smog.

Causes

There are multiple causes but few are

- ① burning of fossil fuels
- ② Industrial smoke
- ③ burning of agricultural waste.

Effects

- ① throat infections
- ② triggers asthma
- ③ Eye irritation

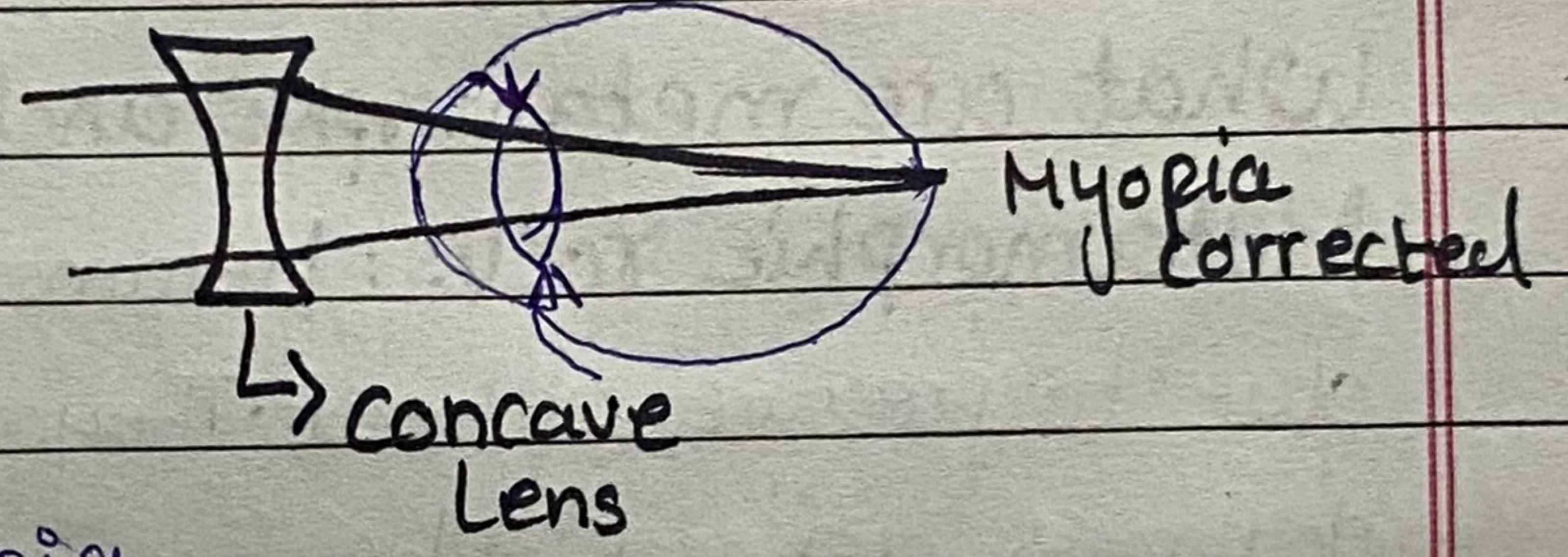
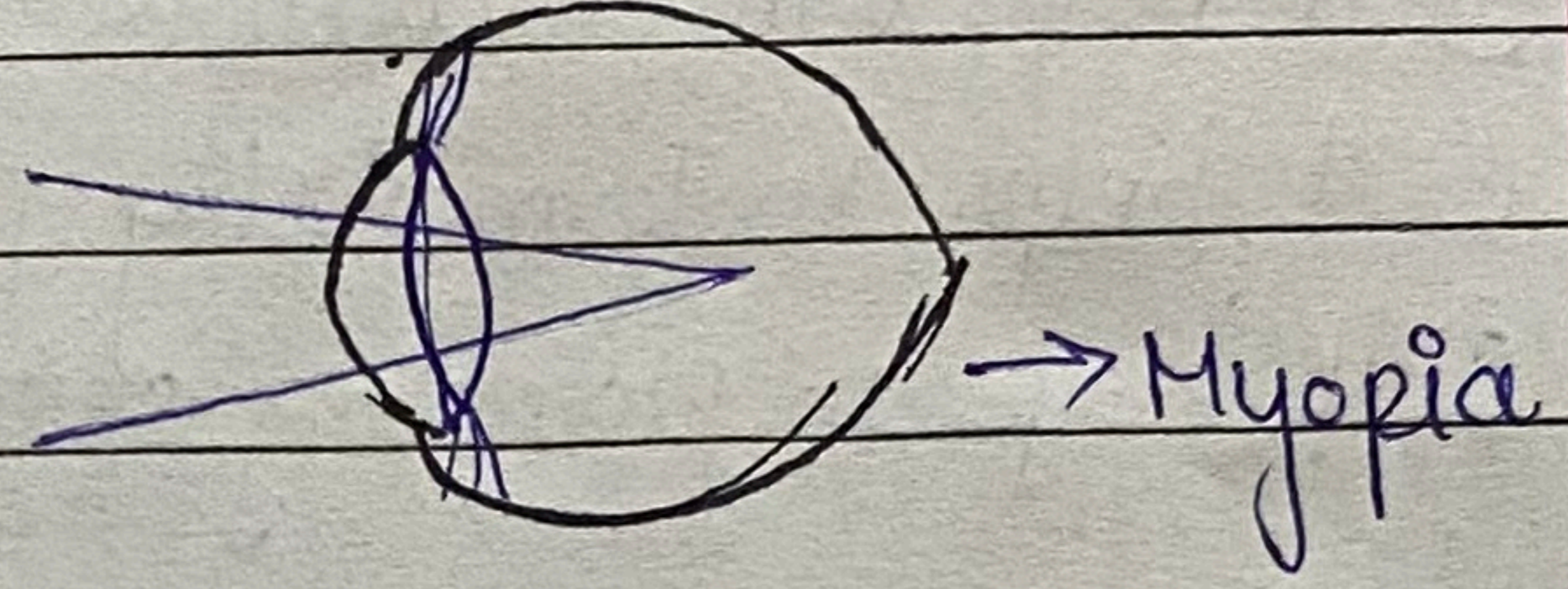
Types of smog

- ① **Industrial smog:** also known as black smog, usually emitted from burning of fossil fuels. A common feature of cold climates.
- ② **Photochemical smog:** caused by burning of hydrocarbons. It is a feature of hotter climates.

d) Explain far and short sightedness

Short sightedness: also known as Myopia. It is when an image is formed before the retina and not ~~on~~ ^{at} the retina. Therefore objects that are far away are viewed blur or appear blur.

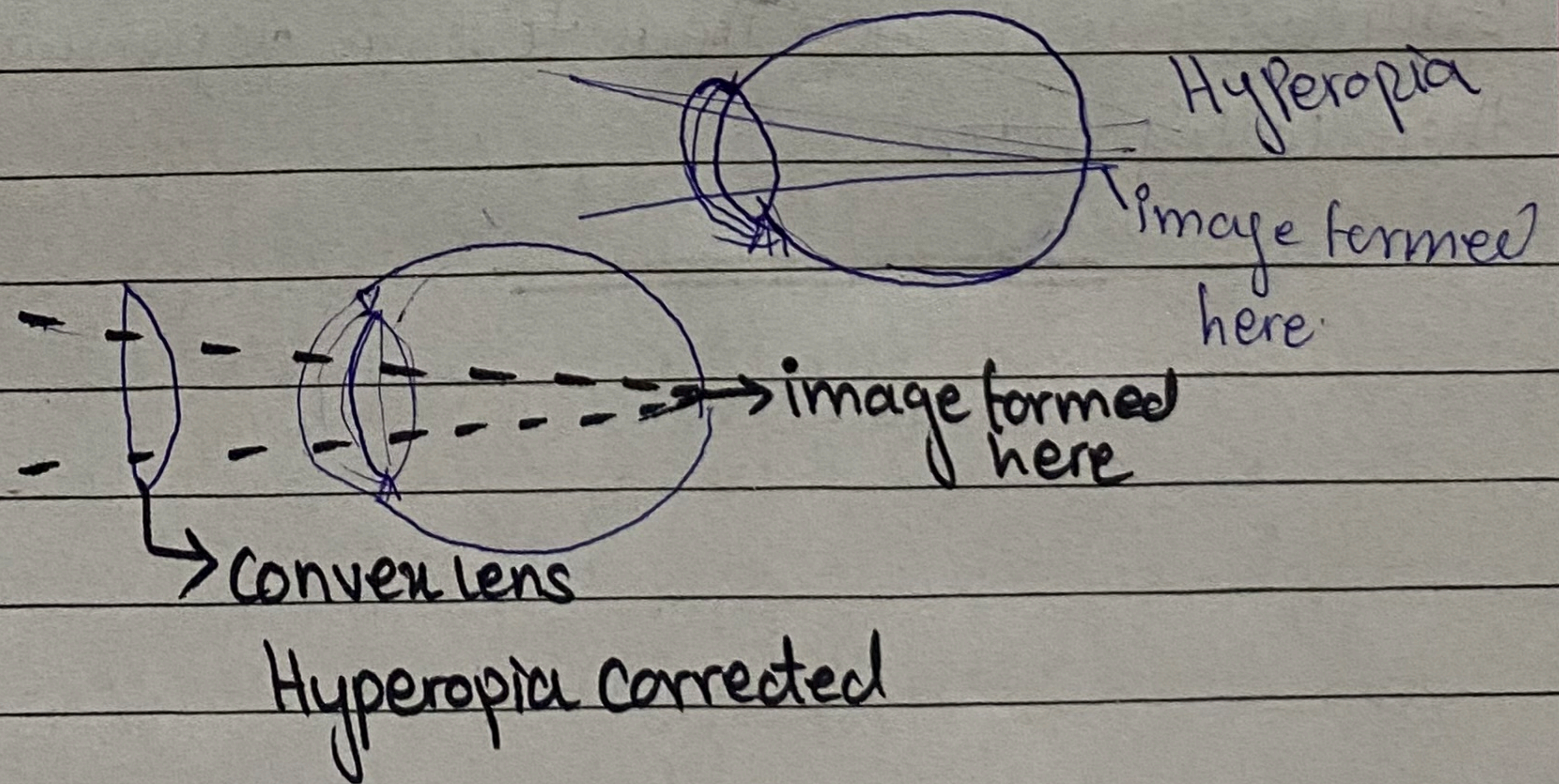
Treatment: One can use a concave lens to fix the problem



Far sightedness: also known as Hyperopia.

It is when image is formed behind the retina and not on it. Due to this, objects that are closer appear to be blur.

Treatment: using a convex lens can fix far-sightedness



c) Importance of Risk ^{assessment} _{ma} in DRM

Disaster risk management is the mechanism to manage risk ~~at~~ or mitigate the effects of risks. Risk assessment is therefore very important because

- ① it helps in allocating resources
- ② it helps to make early provisions or foresee risks/disasters.
- ③ it helps in evacuations
- ④ it helps in formulating policies.
- ⑤ it helps in planning settlements in a certain area.

What are metamorphic and Igneous rocks?

Metamorphic rocks: Metamorphic rocks are formed due to pressure or heat. They are existing rocks that go through pressures or heat to form. They form deep in Earth's crust as temperature is high there. They are generally shiny like Marble. et

Igneous Rocks: They are formed when magma or lava cools and solidifies. Formed either beneath the earth's surface or above it. Examples include Granite, Basalt etc. Their texture depends on their cooling rate.