

## S.2 PHYSICS

### Item one:

Nankya a S.2 student woke up very early in the morning to prepare for school.

Even though it was dark, she saw different light rays and some twinkling from the nearby bush.

She also looked in the plane mirror and saw multiple images arising due to the introduction of another plane mirror inclined at  $60^\circ$  to the first one.

### Task:

- Identify the sources of light seen by Nankya
- What are the characteristics of the images seen by Nankya?
- How many images did Nankya see?

### Item two:

John has a factory dealing in the buying and selling of milk. The workers lift the milk to the upper storage room in cans of mass 10kg to be stored in a deep freezer. To reach the storage room, a stair case of 50 steps each of height 5cm is climbed.

During the daily routine, the following challenges are brought forward;

- The milk brought at times is not pure.
- Workers loose grip of the cans and fall down.

### Task:

- How can the factory determine the purity of milk?
- How can one identify the state of milk stored in the upper storage room?
- How much energy is needed to lift one can to the storage room

### Item three:

During the physics trip, students visited a flower farm, Tent like structures were seen in which flowers are grown.



Students had the following observations after entering these structures;

- It was very hot inside
- Matter that expand easily was not allowed in the tents.
- One student saw a thermometer whose mercury thread was at about 37cm from the bulb hanged in the tent. It was later known that such a thermometer has a length of 25cm at ice point and 45cm at steam point.

**Task:**

- a) Why was the inside of the tent very hot?
- b) What was the temperature in the tent?
- c) Explain one application of Expansion matter.

**E N D**