malaysia olympiad on astronomy and astrophysics

Telescope Round

Good Luck and Clear Skies!

General Instructions

1. The **Telescope Round** consists of **2 tasks** on practical observations. The allocated time for the operation of each task is listed in the question title. The total duration for this round is **10 minutes**.
2. You are allowed to bring stationery, calculator and geometric sets to the telescope station.
3. At the end of the first task, you may signal the invigilator (Camp Facilitator) to check your answer.
4. You are to hand in this question sheet to the invigilator (Camp Facilitator) after you finish the last task. Make sure you have written your **Name** and **IC Number** in the grid below.
5. The mark distribution is as follows:

Question	Acquired Marks	Marks
A1		10
B1		15
B2		25
Total		**50**

Name

IC Number

1. **Station A - 3 minutes**

   TASK: Align the finderscope with the telescope such that both are centred on the same object. Marks will be given for **accuracy**, **NOT speed**.

   Upon completing the task, follow instructions given by the invigilator and proceed to Station B.

2. **Station B - 8 minutes**

   TASK: Observe the Object

   Telescope 1

   A telescope is pointing to the **Object**. Observe the **Object** and its background. You may adjust the focusser but **DO NOT move or change the position of this telescope**.

   Telescope 2

   Go to Telescope 2 located 2 m from Telescope 1. The invigilator will explain the controls of the telescope.

   The focal length of both telescopes is 360 mm. The focal length of the eyepiece of the Telescope 2 is 25 mm with apparent field of view of 50°.

   TASK: Calculate the true field of view of the second telescope. Please express your answer to the precision of one decimal point.

   True Field of View: _____ °

   TASK: Both telescopes have the same distance to the **Object**. Calculate the distance between the second telescope and the **Object** by applying the true field of view calculated from the task below. You may move between Telescope 1 and Telescope 2 and adjust Telescope 2 freely. However, **DO NOT ADJUST Telescope 1**. Please show your calculation and express your answer to the precision of one metre.

   Distance = _____ **m**