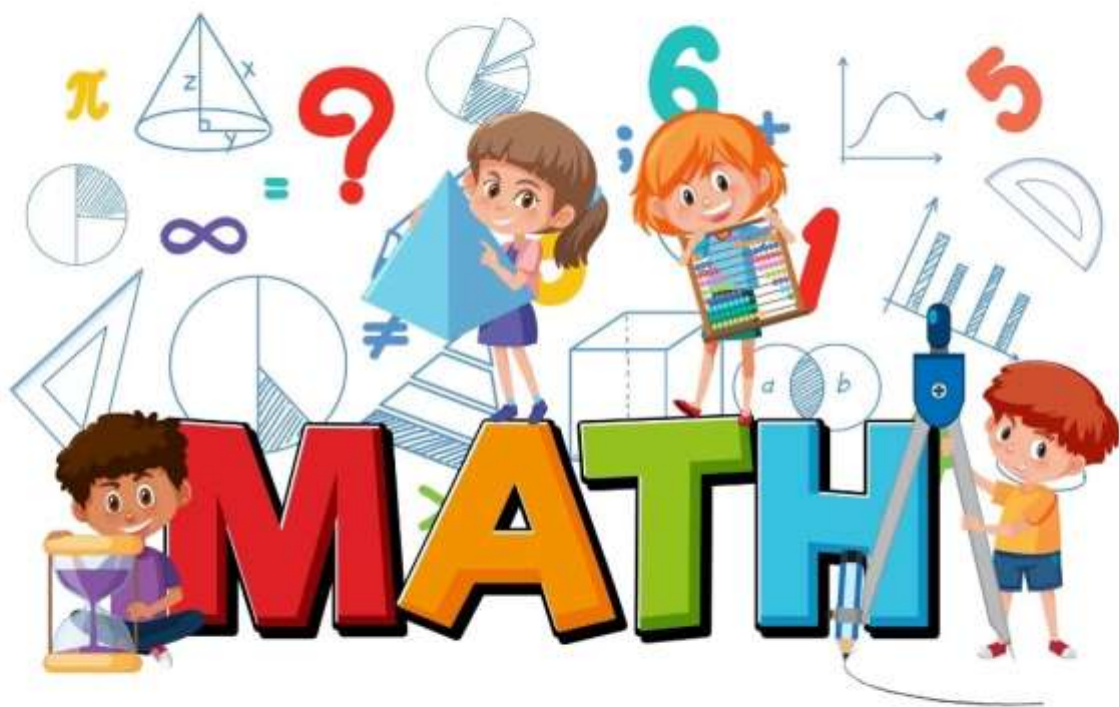




IBMYP Extended Maths Sample Paper 1



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IB MYP Extended Math

On screen-examination

Total Marks: 100 marks

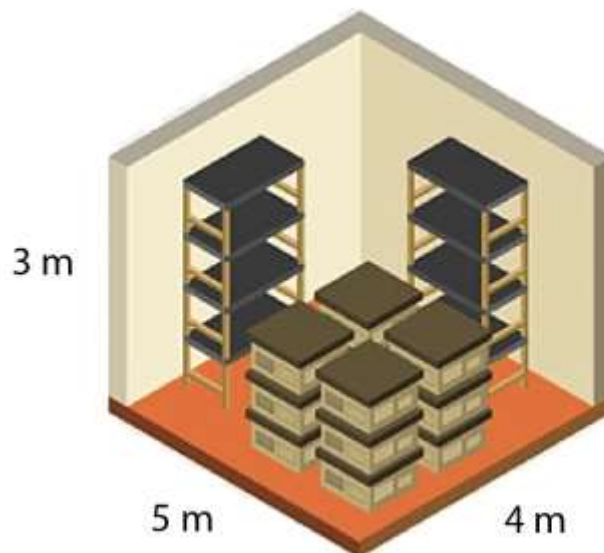
Instructions

- The on-screen examination has not yet started.
- Your time will begin once you have clicked the Start button below. Do not click Start until instructed to do so.
- Before the examination begins you are given 5 minutes to become familiar with its structure. Please navigate around the examination, taking note of the length of each task and question. You have 2 hours to complete the examination.
- There are 10 separate questions in this examination. Each question may have sub-parts. Answer all the questions in the response boxes provided. The maximum mark for this examination is 100 marks.
- As you progress through the questions, your answers are automatically saved.
- When 2 hours has ended, you will no longer be able to answer any questions.

Question 1 (8 marks)

There is a 10-story apartment building with 6 apartments on each floor. The apartments are identical in size and layout.

Dimensions: The storage room has a length of 5 meters, a width of 4 meters, and a height of 3 meters.



Question 1a (2 marks)

What is the volume of a storage room located on the ground floor of the apartment building?

To calculate the volume of the storage room, we can use the formula: Volume = Length × Width × Height.

Volume = 5 meters × 4 meters × 3 meters

Volume = 60 cubic meters

Therefore, the volume of the storage room is 60 cubic meters.

Question 1b (3 marks)

What is the mean number of residents per apartment in the building?

Resident Count:

- **On the first floor, each apartment has 4 residents.**
- **On the second floor, each apartment has 3 residents.**
- **On the third floor, each apartment has 5 residents.**

To find the mean number of residents per apartment, we need to calculate the total number of residents and divide it by the total number of apartments.

Total number of residents on the first floor = 6 apartments × 4 residents = 24 residents.

Total number of residents on the second floor = 6 apartments × 3 residents = 18 residents.

Total number of residents on the third floor = 6 apartments × 5 residents = 30 residents.

Total number of apartments = 6 apartments per floor × 10 floors = 60 apartments.

Total number of residents = 24 residents + 18 residents + 30 residents = 72 residents.

Mean number of residents per apartment = Total number of residents / Total number of apartments

Mean number of residents per apartment = 72 residents / 60 apartments

Mean number of residents per apartment ≈ 1.2 residents

Therefore, the mean number of residents per apartment in the building is approximately 1.2 residents.

Question 1c (3 marks)

What outside temperature (T) would result in an inside temperature (I) of 25 degrees Celsius?

Temperature Control Equation: The inside temperature (I) of an apartment is determined by the outside temperature (T) according to the equation $I = 0.8T + 20$.

To find the outside temperature (T) that would result in an inside temperature (I) of 25 degrees Celsius, we can substitute $I = 25$ into the temperature control equation and solve for T.

$I = 0.8T + 20$

$25 = 0.8T + 20$

Subtracting 20 from both sides:



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