

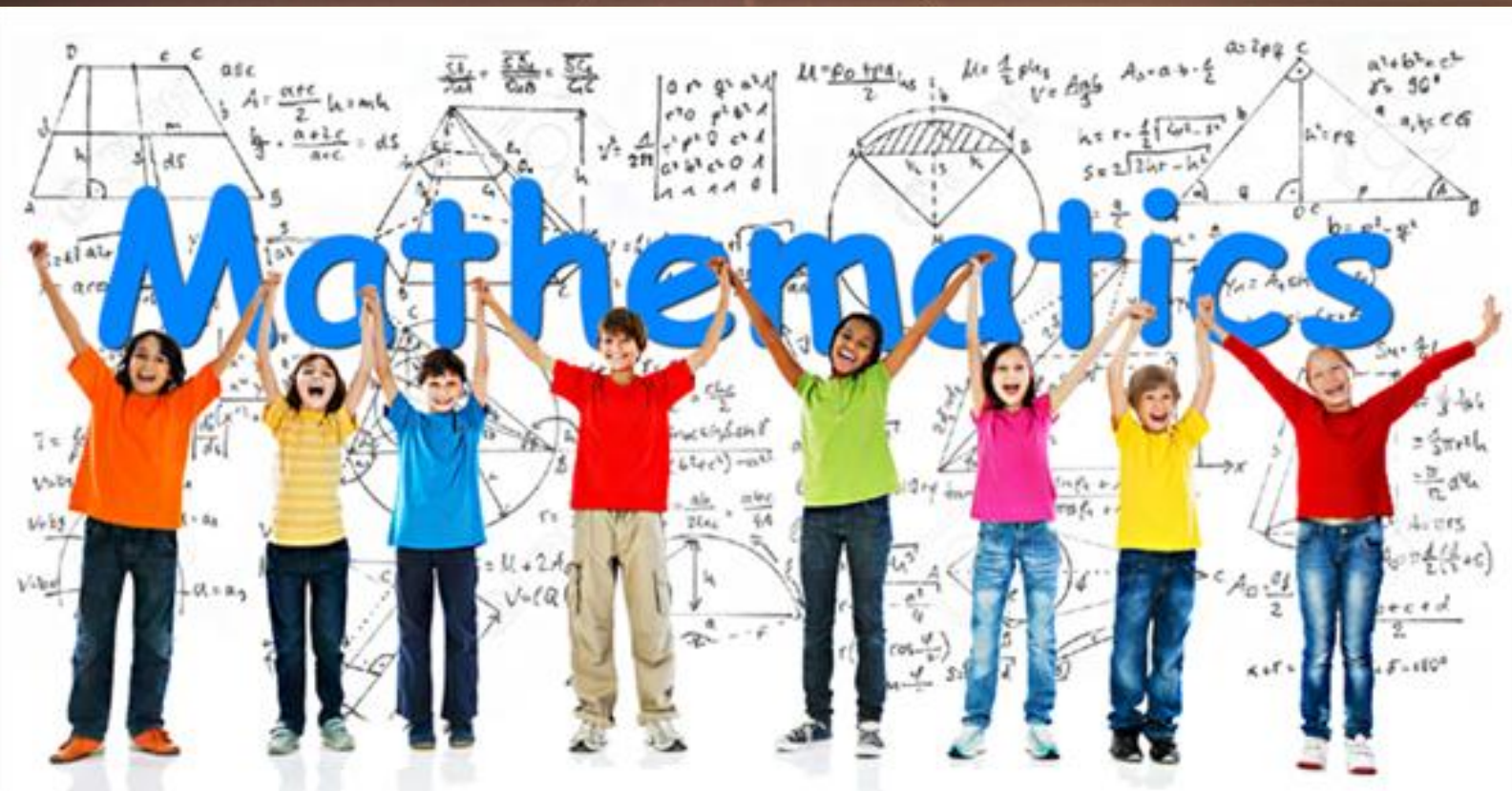
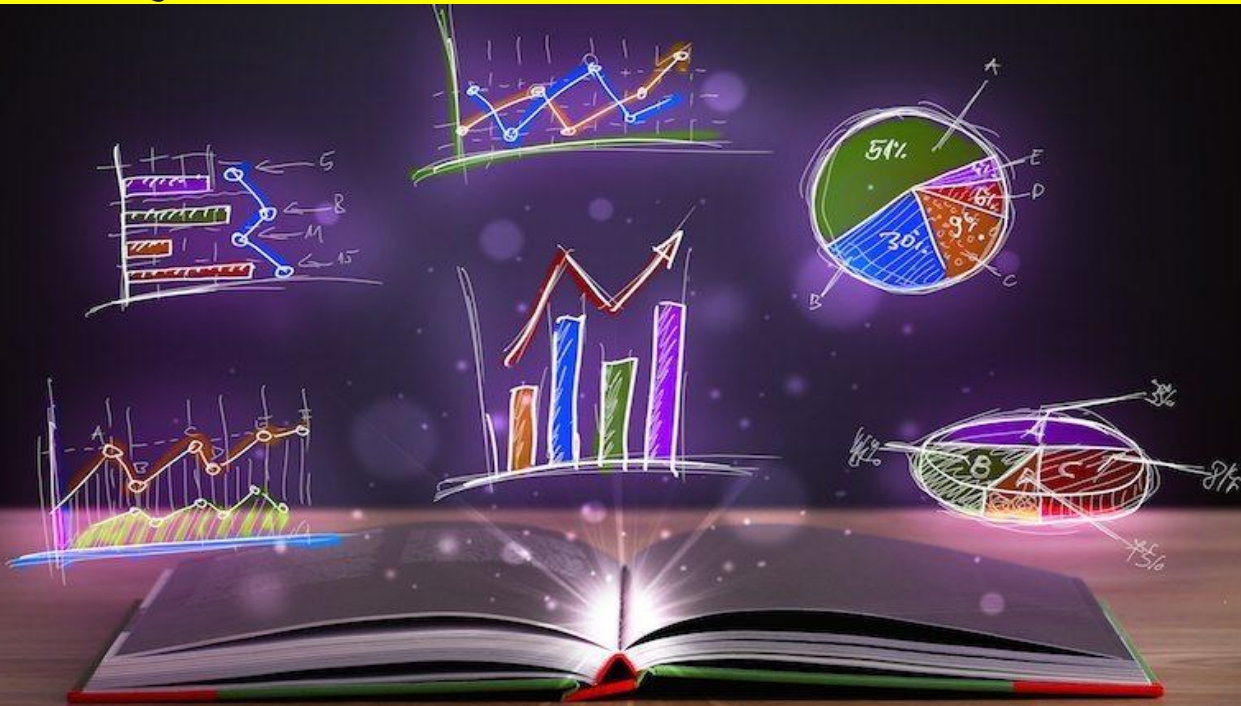
MATHLETE



(अक्सर पूछा करते हैं.....)

Classes – 6th to 8th

Series
1



MATHEMATICAL LITERACY GROUP- CHANDIGARH

MOVING TO MARS



Explanation

Our population is growing! There is no longer enough space for everyone. People are moving to Mars...

What I know

- Each family that goes to Mars will get a garden.
- There are different designs for the garden space to choose from.

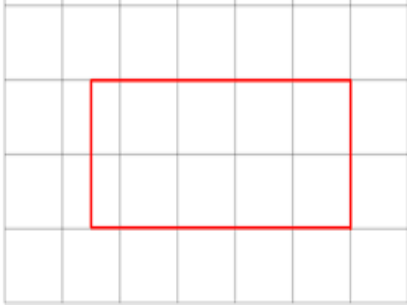
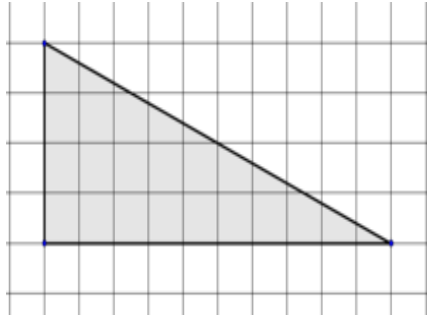


What I want to know

- What is the **perimeter** and **area** of each garden space design?

First you need to click on the links to see how to calculate Perimeter and Area.

Example

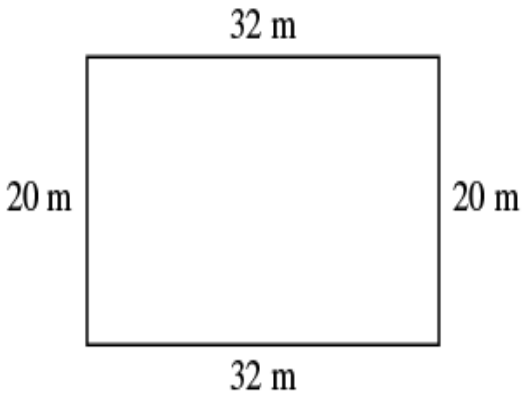
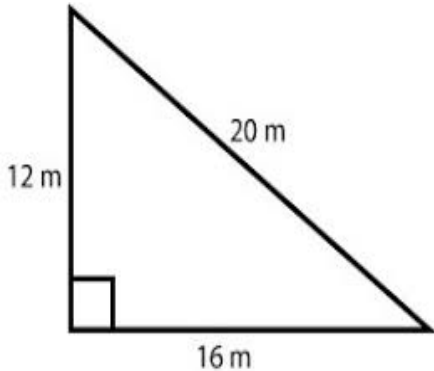
Rectangle	Triangle
	
Perimeter = $P = 2 \times \text{length} + 2 \times \text{width}$ $P = 2 \times 4\text{m} + 2 \times 2\text{m}$ $P = 8\text{m} + 4\text{m}$ $\underline{P = 12\text{m}}$ Area = $A = \text{length} \times \text{width}$ $A = 4\text{m} \times 2\text{m}$ $\underline{A = 8\text{m}^2}$	Perimeter = $P = \text{total length of all 3 sides}$ $P = 4\text{m} + 10\text{m} + 11\text{m}$ $\underline{P = 25\text{m}}$ Area = $A = \frac{1}{2}(\text{base} \times \text{height})$ $A = \frac{1}{2}(10\text{m} \times 4\text{m})$ $A = \frac{1}{2}(40\text{m})$ $\underline{A = 20\text{m}^2}$

Task 1

These are the initial 2 garden space designs for Mars. Work out the perimeter and area for each design.

Show your working



Design 1	Design 2
	
$P = 2 \times \text{length} + 2 \times \text{width}$ $P =$	$P = \text{Total length of all three sides}$ $P =$
$A = \text{length} \times \text{width}$ $A =$	$A = \frac{1}{2}(\text{base} \times \text{height})$ $A =$

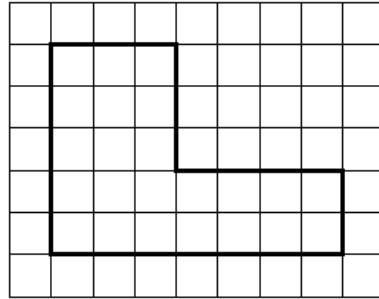
These designs were so boring and got rejected!



Task 2

They decided to look at garden spaces with compound shape designs.

Example:

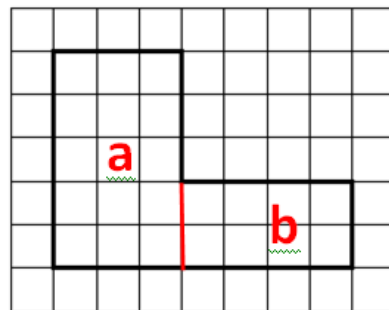


To work out the perimeter, I have to add the length of all the sides.

Starting from the bottom left corner, going up and around, the sum of length of each side:

$$\text{Perimeter} = 5\text{m} + 3\text{m} + 3\text{m} + 4\text{m} + 2\text{m} + 7\text{m}$$

$$\text{So the } \underline{\text{Perimeter} = 24\text{m}}$$



To work out area, I have to make it into easier shapes.

Now I have shape a and shape b.

$$\text{Area (a)} = 3\text{m} \times 5\text{m}$$

$$\text{Area (b)} = 4\text{m} \times 2\text{m}$$

$$\text{Area (a)} = 15\text{m}^2$$

$$\text{Area (b)} = 8\text{m}^2$$

$$\text{Total Area} = 15\text{m}^2 + 8\text{m}^2$$

$$\underline{\text{Total Area} = 23\text{m}^2}$$

These are the 2 new garden space designs for Mars. Work out the perimeter and area for each design.

Design 1	Design 2
P =	P =
A =	A =

Brain teaser

?

6020

1244

4213

Task 3

These are the final 2 designs. Work out the perimeter and area for the following designs.

Show your working.

Design 1	Design 2
P =	P =
A =	A =

Which design would you prefer and why?

CAN YOU SOLVE THIS MATH BRAIN TEASER ?

CHALLENGE !

+ + = 18

+ + = 30

- = 7

+ + = ?

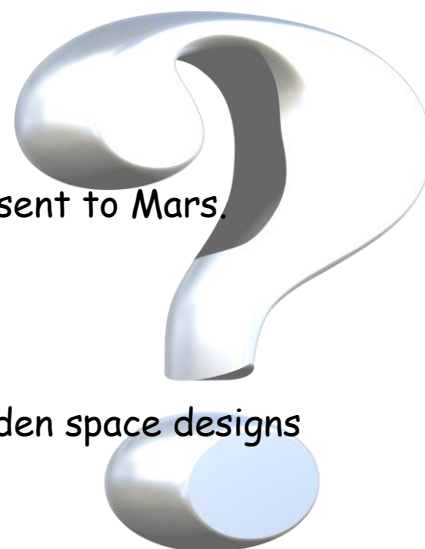
Extra challenges to extend your understanding!

Challenge 1

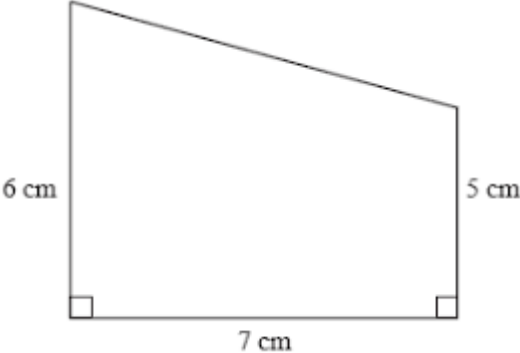
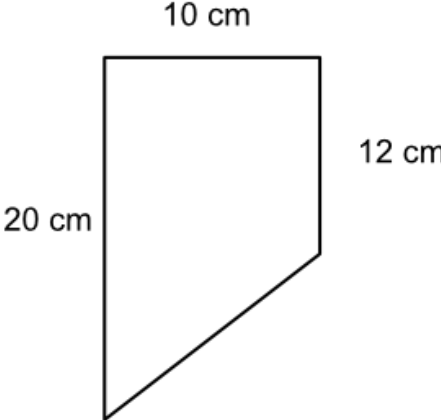
You have been given the option of having your entire kitchen sent to Mars. Work out the perimeter and area of your kitchen.

Challenge 2

Tiny ants will go to Mars too! Work out the area of their garden space designs given below.



Show your working.

Design 1	Design 2
	
A =	A =

Want to think more?

Considering each box as a square of area 1 m^2 , can you work out the approximate **area** of each of these clouds in m^2 ?

