

# MATHLETE

(अक्सर पूछा करते हैं.....)

Classes - 6<sup>th</sup> to 8<sup>th</sup>

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.

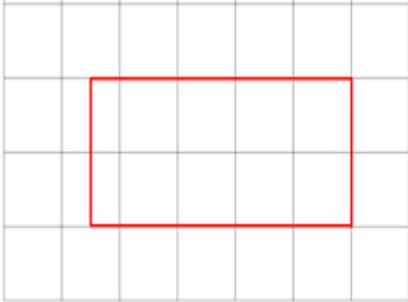
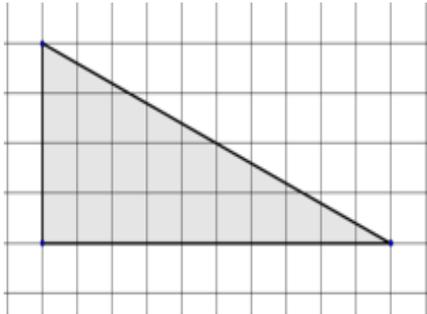


## What I want to know

- 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

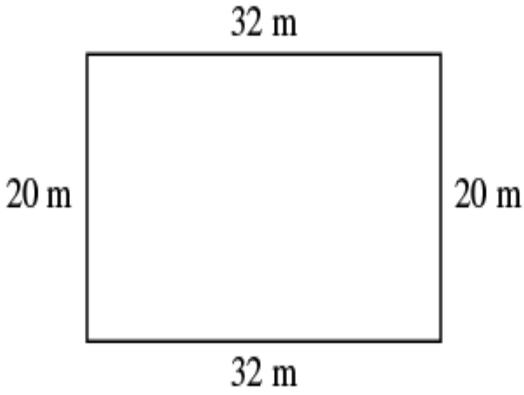
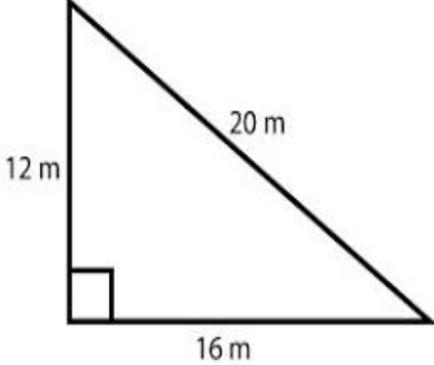
Rectangle	Triangle
	
<p>Perimeter = <math>P = 2 \times \text{length} + 2 \times \text{width}</math> <math>P = 2 \times 4\text{m} + 2 \times 2\text{m}</math> <math>P = 8\text{m} + 4\text{m}</math> <b><u><math>P = 12\text{m}</math></u></b></p> <p>Area = <math>A = \text{length} \times \text{width}</math>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

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

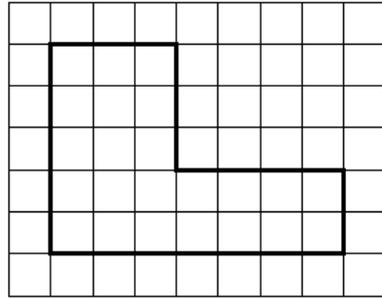
These designs were so boring and got rejected!



## Task 2

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

### Example:

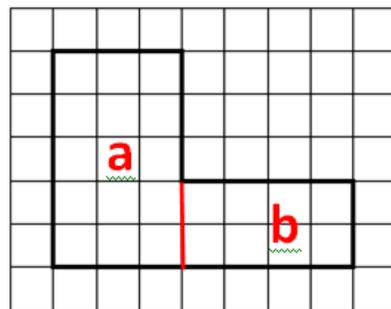


To work out the perimeter, I have to add the length of all the sides.

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

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

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



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

Now I have shape a and shape b.

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

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

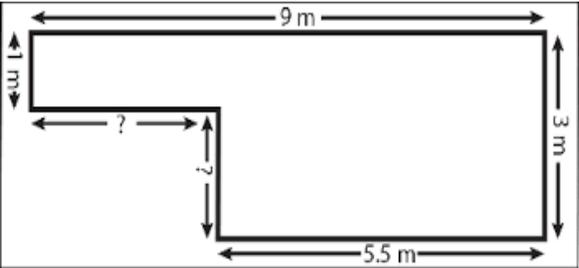
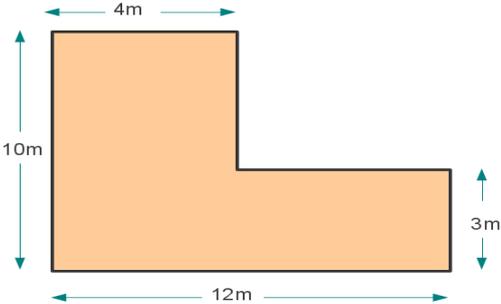
$$\text{Area (a)} = 15\text{m}^2$$

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

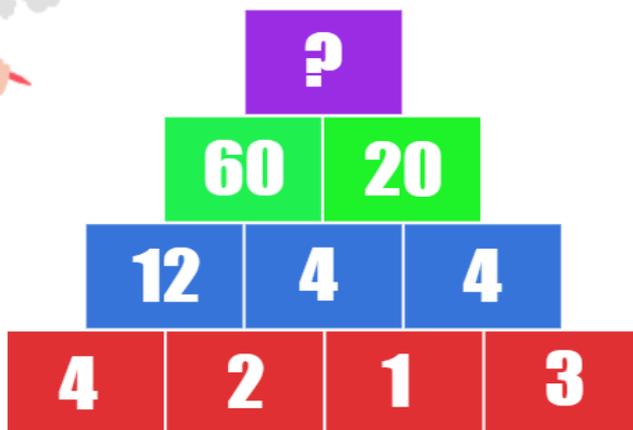
$$\text{Total Area} = 15\text{m}^2 + 8\text{m}^2$$

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

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 =</p>	<p>P =</p>
<p>A =</p>	<p>A =</p>

# Brain teaser



### 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 !**



$$\text{Ship's wheel} + \text{Ship's wheel} + \text{Ship's wheel} = 18$$

$$\text{Ship's wheel} + \text{Clock} + \text{Clock} = 30$$

$$\text{Clock} - \text{Pie chart} = 7$$

$$\text{Pie chart} + \text{Clock} + \text{Ship's wheel} = ?$$



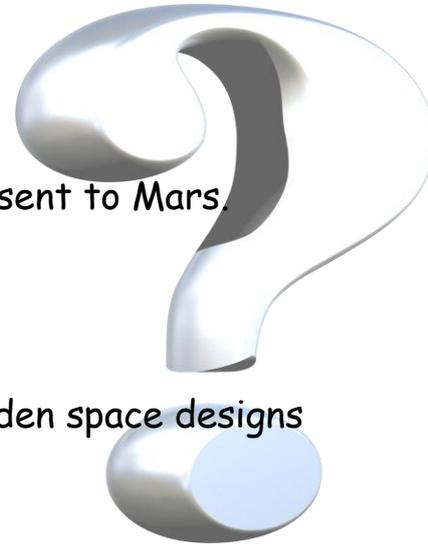
## Extra challenges to extend your understanding!

### Challenge 1

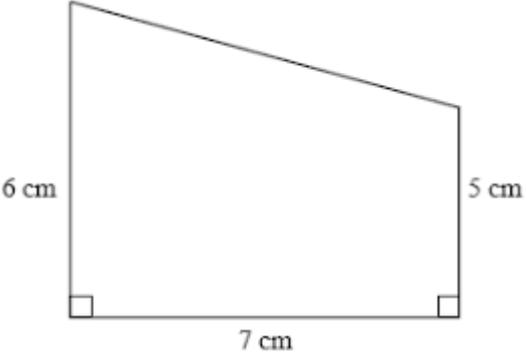
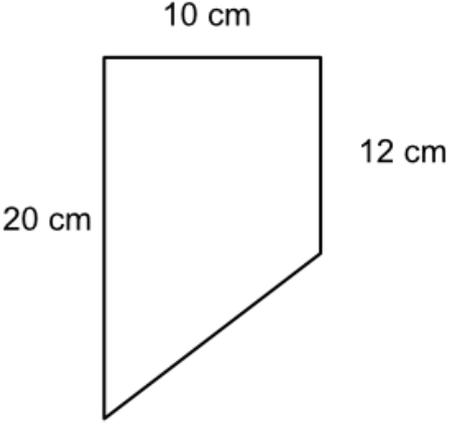
You have been given the option of having your entire kitchen sent to Mars. Work out the perimeter and area of your kitchen.

### 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  $1 \text{ m}^2$ , can you work out the approximate **area** of each of these clouds in  $\text{m}^2$ ?

