

Mathematics

Surface Area of Cuboids

Downloadable Resource

Mrs Buckmire

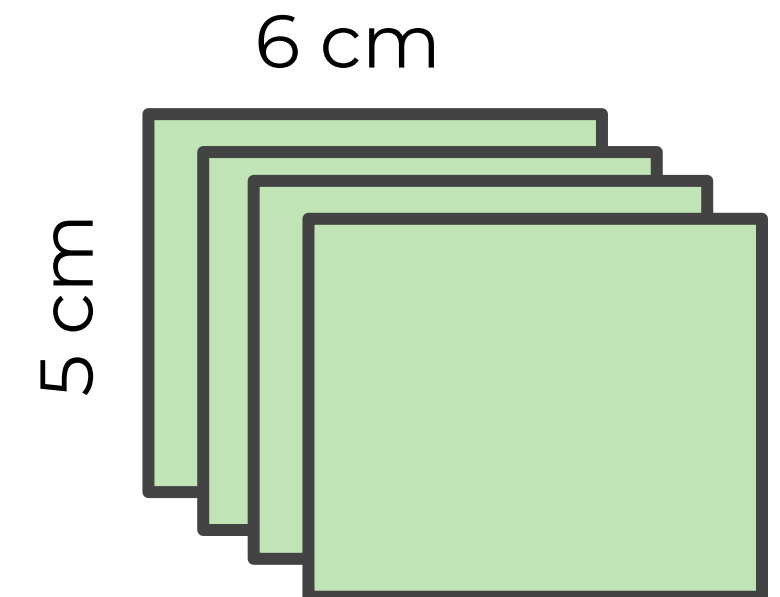
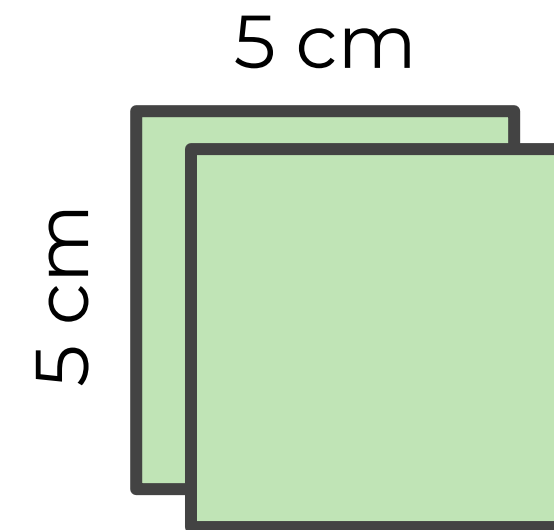
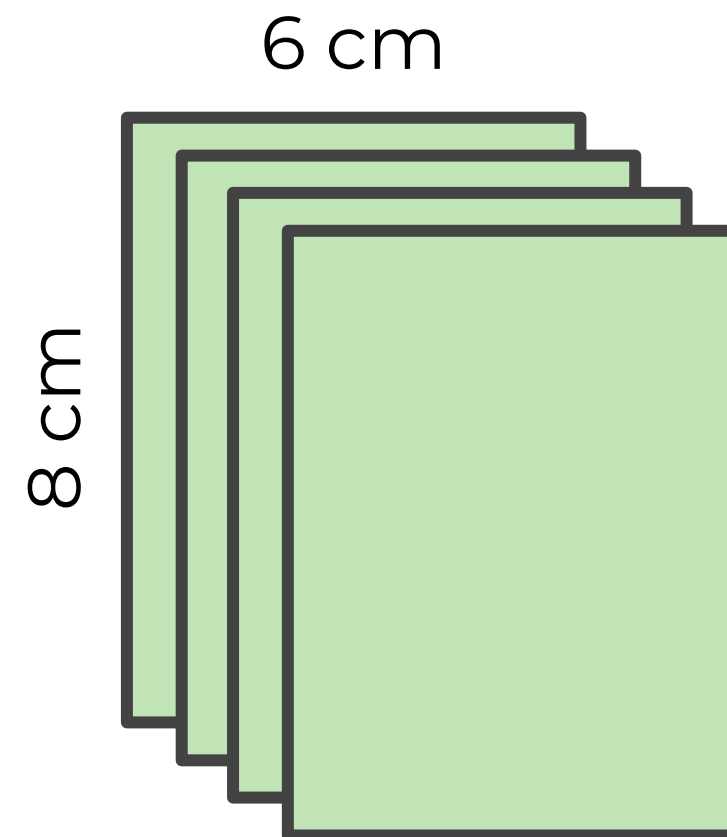
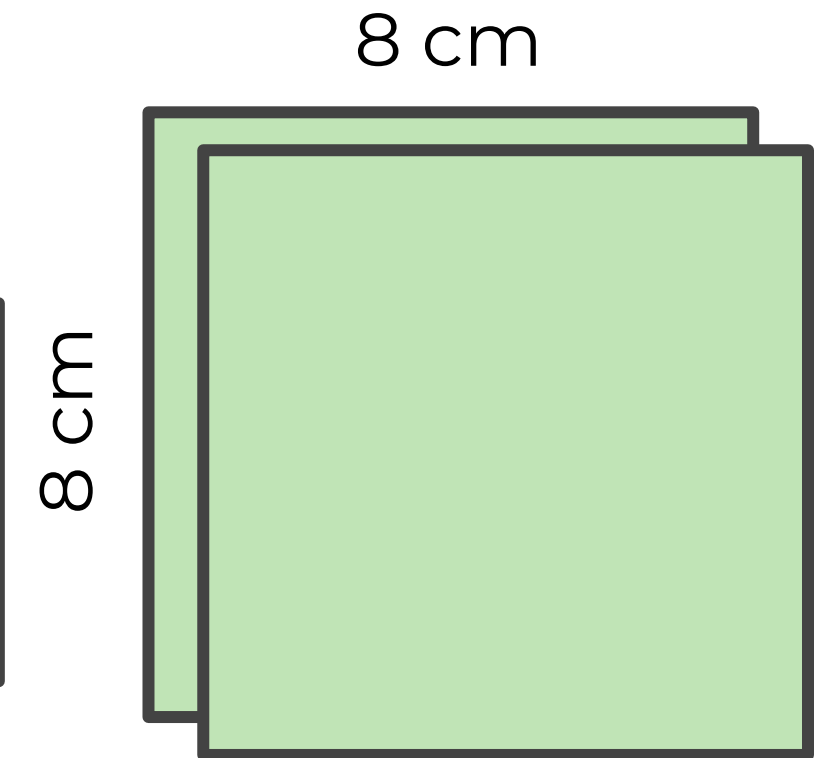
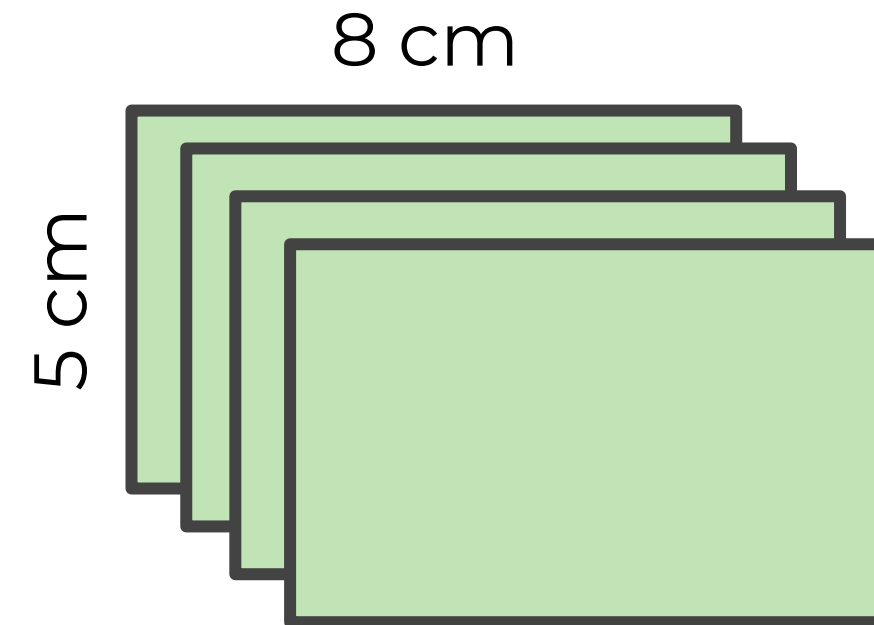
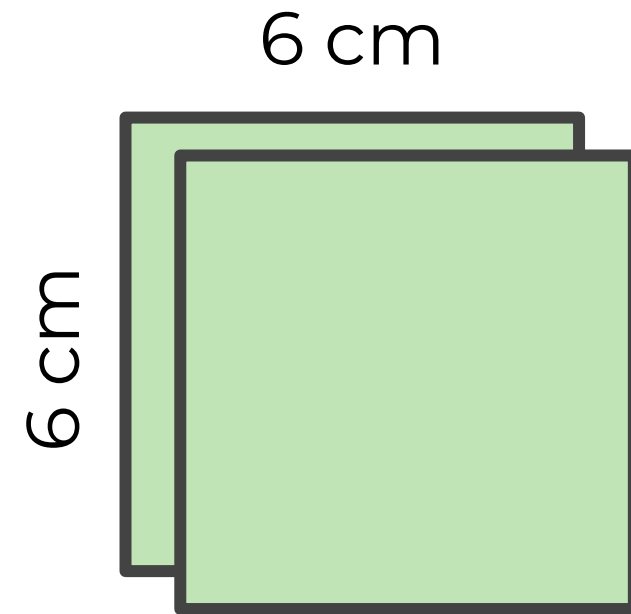


Support on the next slide

Try this

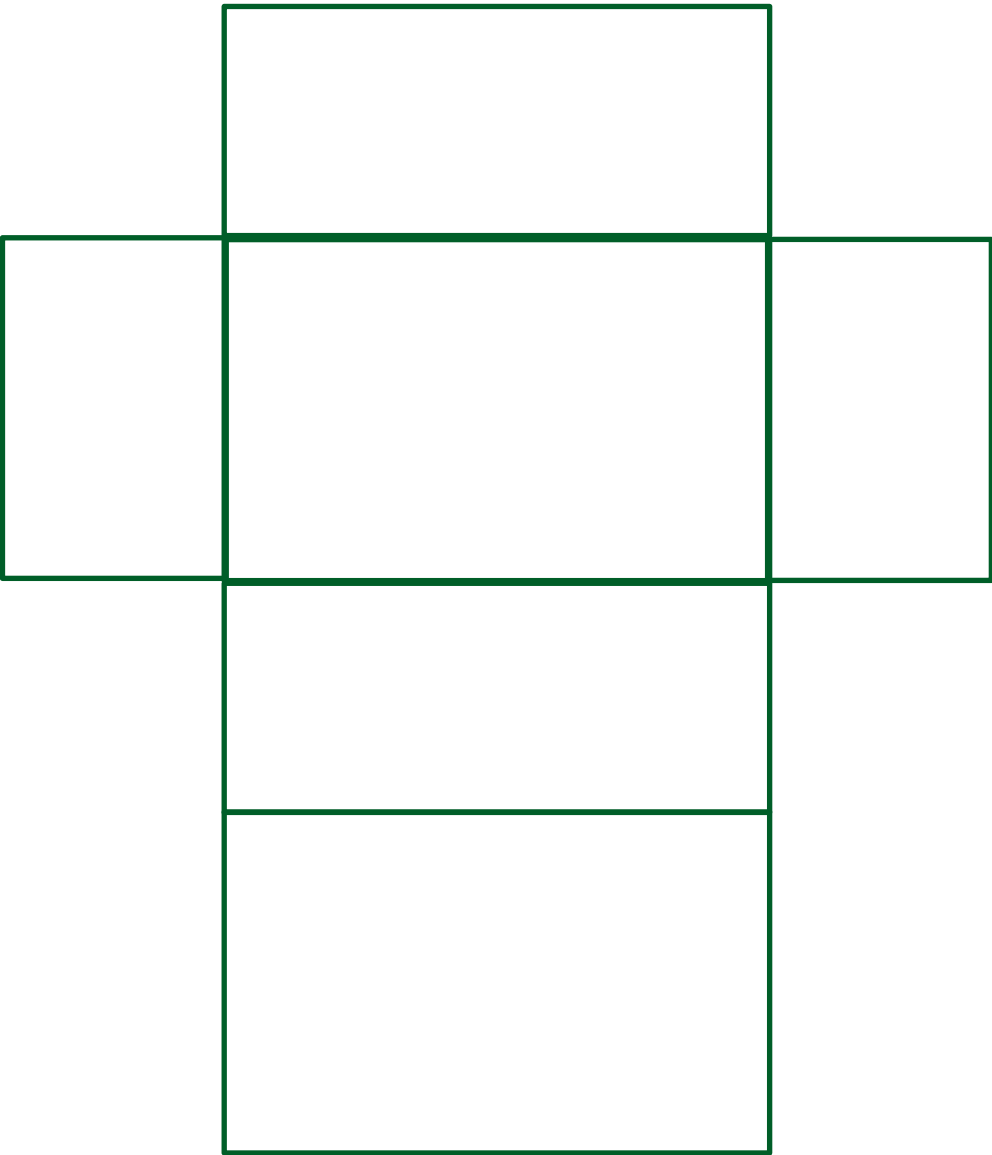
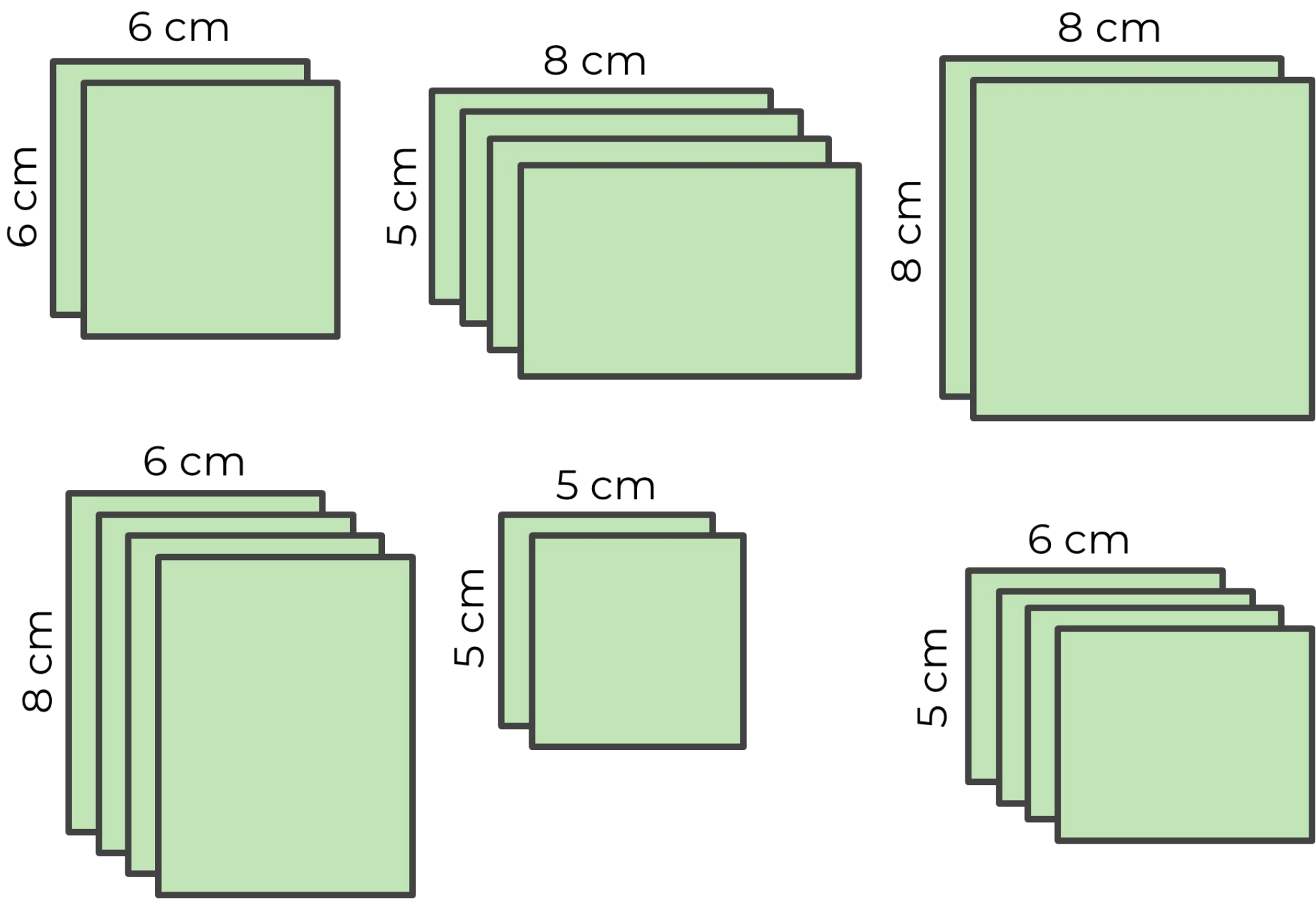
How many ways can these groups of rectangles be arranged to make the net of a cuboid?

What would the total areas of the nets be?



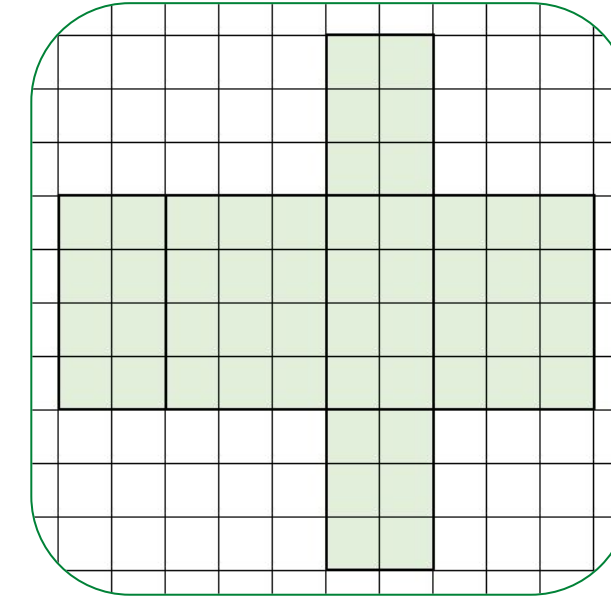
Try this (Support)

How many ways can these groups of rectangles be arranged to make the net of a cuboid? What would the total areas of the nets be?

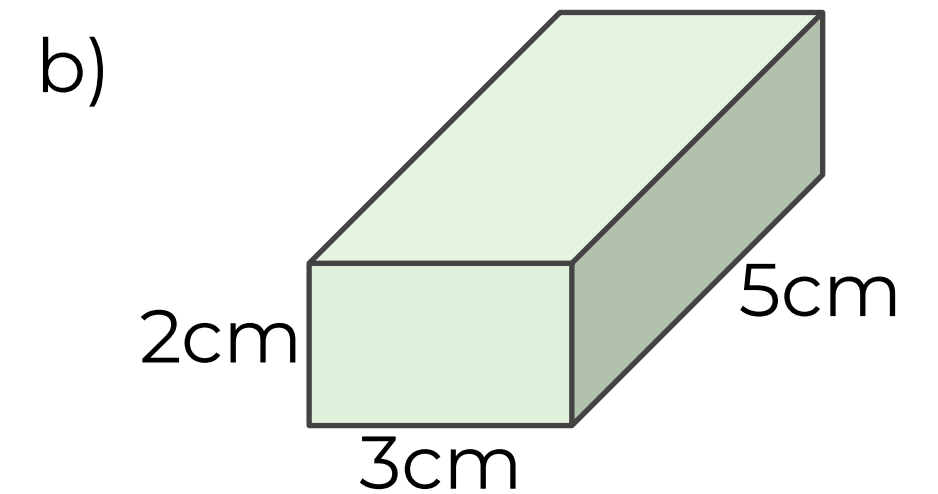
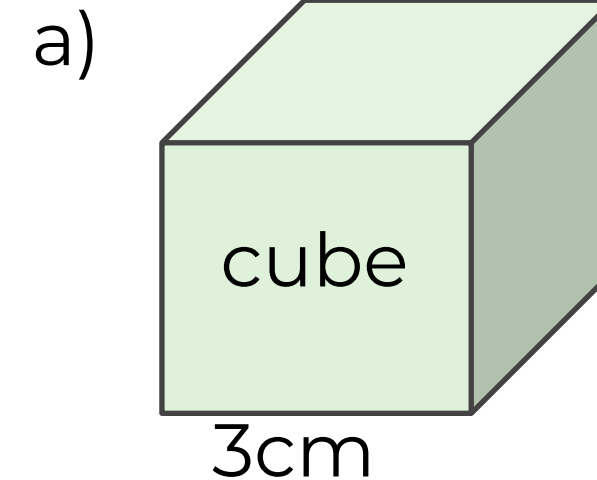


Independent task

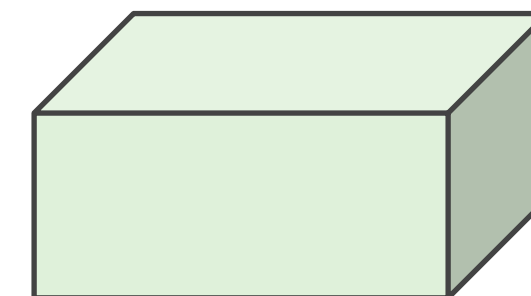
1. Given this net drawn on a centimetre grid what is the surface area of the cuboid it constructs?



2. Work out the surface area of each shape:
Which one has the greater surface area?
Which one has the greater volume?



3. The volume of this cuboid is 70 m^3 . Every side length is a prime number. The base has an area of 35 m^2 .
What is the surface area?



Support on the next slide

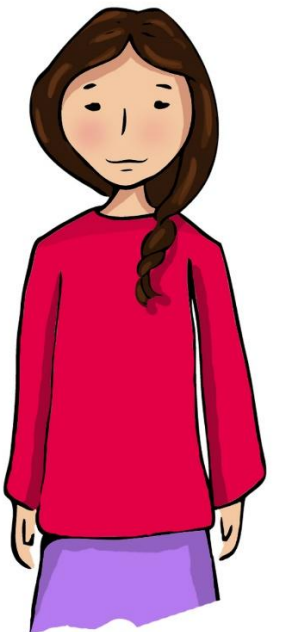
Explore

Each student is thinking of a cuboid with integer dimensions.

- Give the dimensions of a cuboid that satisfies **exactly one** of the statements and does **NOT** satisfy the other two statements.
- Give the dimensions of a cuboid that satisfies **exactly two** of the three statements.
- Give the dimensions of a cuboid that satisfies **ALL three** statements.

My cuboid has a volume of 120 cm^3 and 2 square faces

Binh



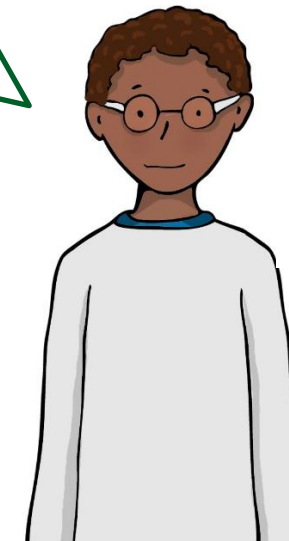
My cuboid has a surface area $> 250 \text{ cm}^2$

Yasmin



My cuboid has at least one edge measuring 3cm

Xavier



Explore



My cuboid has a volume of 120 cm^3 and 2 square faces



Binh

My cuboid has a surface area $> 250\text{ cm}^2$



Yasmin

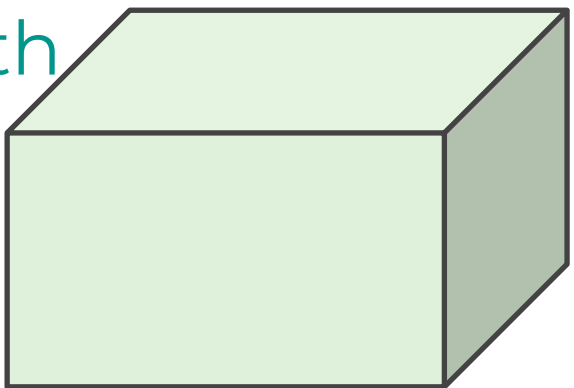
My cuboid has at least one edge measuring 3cm



Xavier

Length

Height



Width

Possible solution

| | | | |
|---|---|---|--|
| ✓ | ✗ | ✗ | |
| ✗ | ✓ | ✗ | |
| ✗ | ✗ | ✓ | |
| ✓ | ✓ | ✗ | |
| ✓ | ✗ | ✓ | |
| ✗ | ✓ | ✓ | |
| ✓ | ✓ | ✓ | |

Place these dimensions in the grid

$5 \times 6 \times 10$

$2 \times 2 \times 30$

