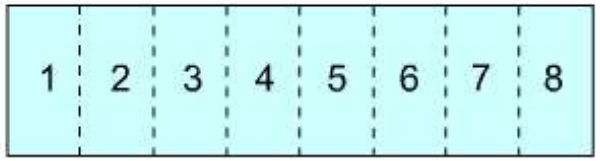
A piece of cardboard is divided into eight strips by drawing equally spaced lines.

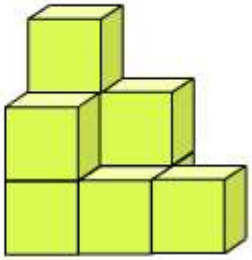


The cardboard is then folded along the lines and joined at the ends to form an octagonal pipe.

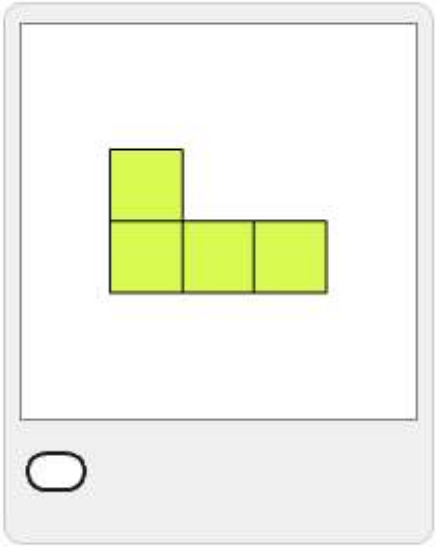
When the pipe is formed, what number face is opposite face 4?

- 1
- 2
- 6
- 8

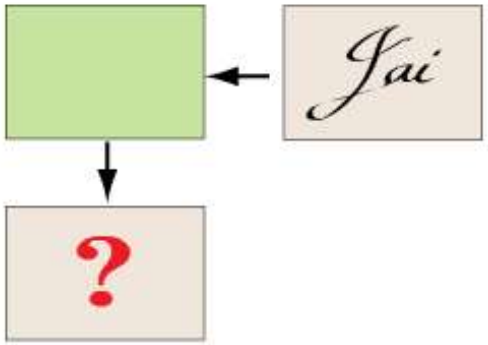
This solid contains nine blocks.



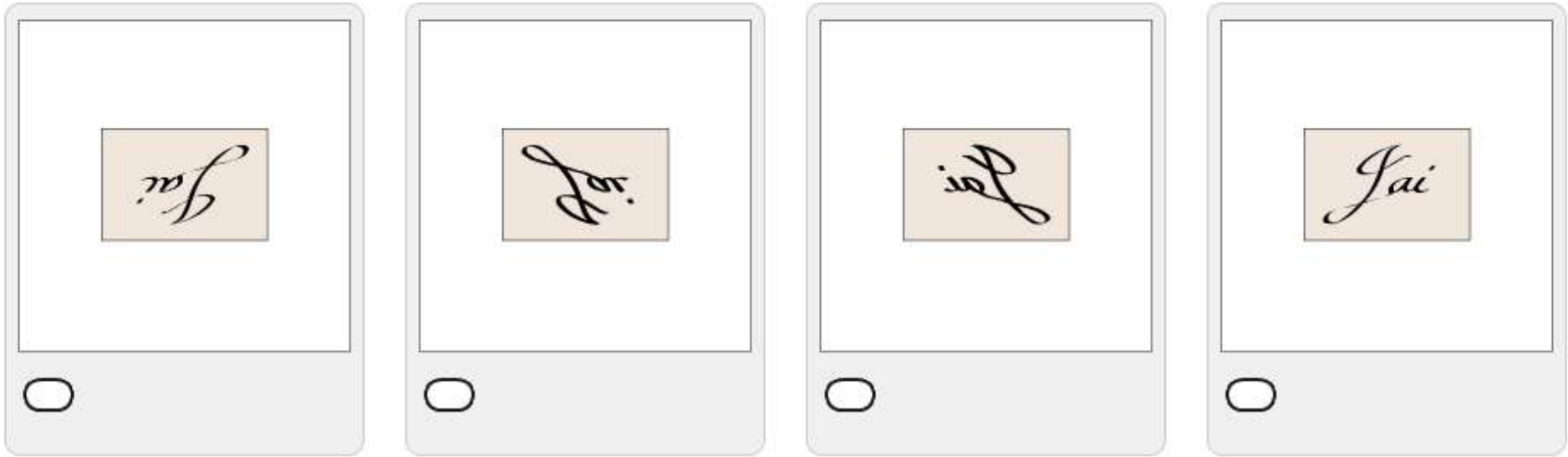
What is the view from the back?



Jai writes his name on a piece of card. He flips the card over its left side so that his name is face down and then flips the card over its bottom edge so that the name can be seen again.

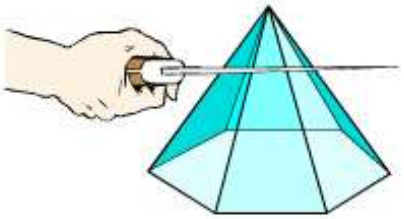


How does it look now?



Terry constructed a model of a hexagonal pyramid.

With a knife he cuts the top off the pyramid (with a cut parallel to the base) and removes it.

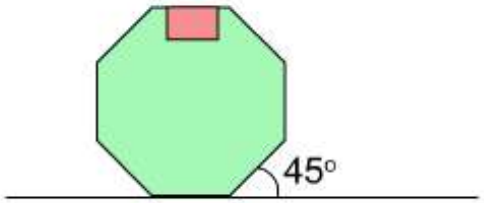


How many faces has the remaining solid?

- 7
- 8
- 12
- 14

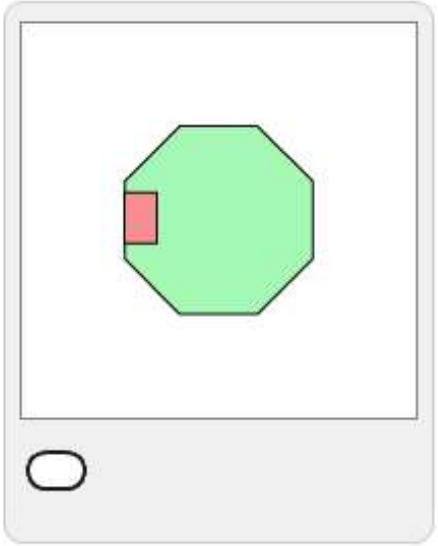
The diagram shows a regular octagon with a rectangle inside.

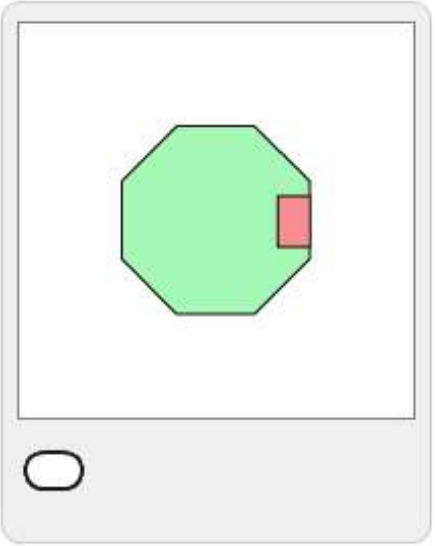
One side of the octagon lies on a line and an angle of 45° is formed.

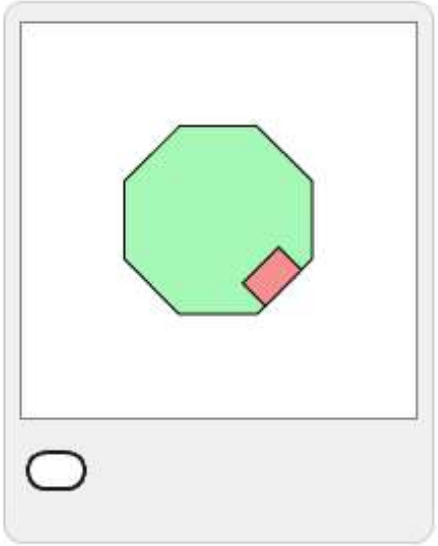


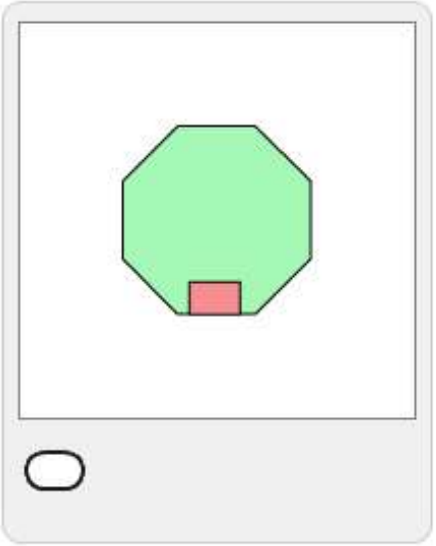
The octagon is now rotated 135° in a clockwise direction.

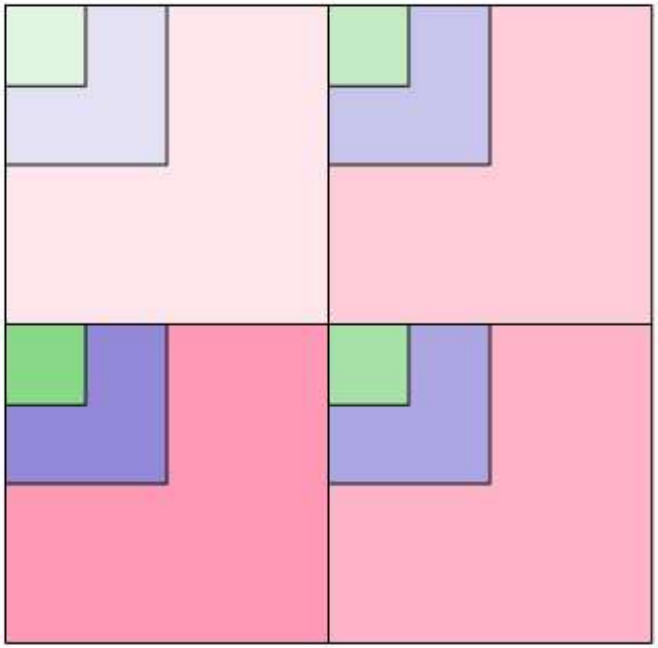
What is the image of the resulting shape?











How many squares can be seen in the diagram?

- 4
- 12
- 13
- 17

The time on the clock is 3:45.

If the minute hand travels through an angle of 270°, what will be the time on the clock?

- 4:15
- 4:30
- 4:45
- 5:15

The diagram shows three spheres in a cylinder.

The spheres 'just fit' inside the cylinder.

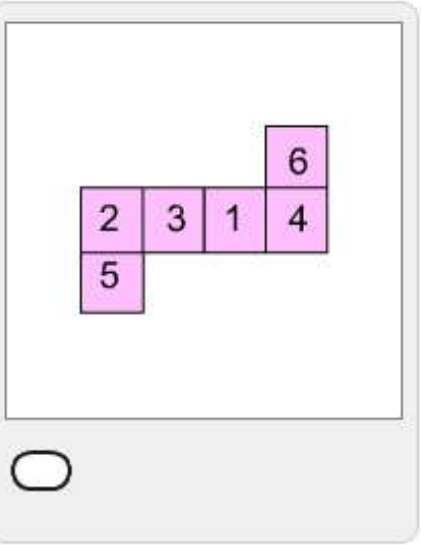
The radius of the cylinder is 10 centimetres.

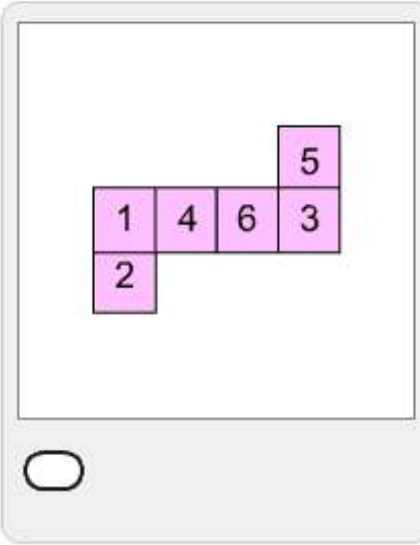
The height of the cylinder is about

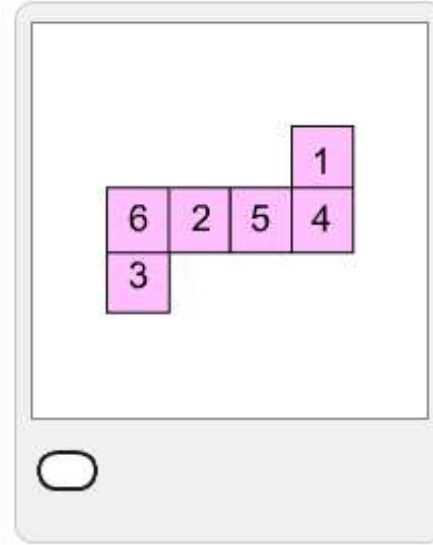
- 30 cm
- 45 cm
- 55 cm
- 60 cm

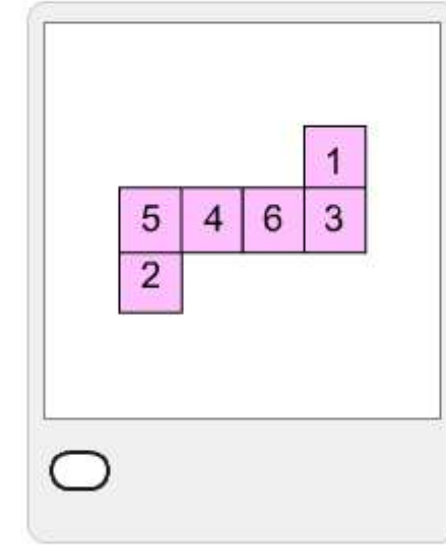
The values on opposite faces of a certain die add up to seven.

Which of the following nets represent this die?

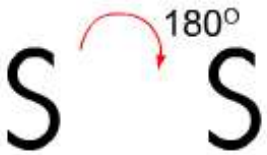








The letter S has half-turn symmetry. If turned through 180 degrees about its centre it appears unchanged.



Which of these letters does not have half-turn symmetry?

- B
- H
- N
- Z

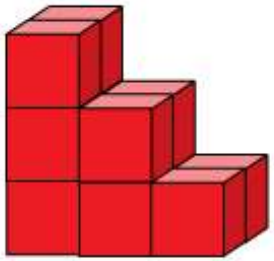
Jannah made a cube using a length of wire.

Each edge of the cube uses a 7-cm length of wire.

What was the total length of wire that Jannah used to make the cube?

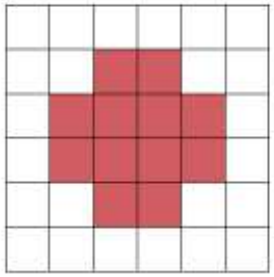
- 42 cm
- 49 cm
- 70 cm
- 84 cm

Lachlan made this shape by placing cubes together on a table.



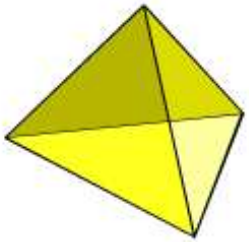
If someone walks around the table looking at the shape, how many faces of cubes can be seen?

- ⬭ 24
- ⬭ 30
- ⬭ 32
- ⬭ 48

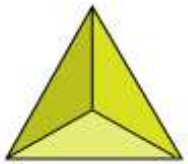


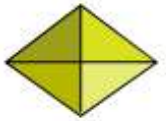
In how many different places could this shape be folded so that the two halves match exactly?

- 2
- 4
- 6
- 8

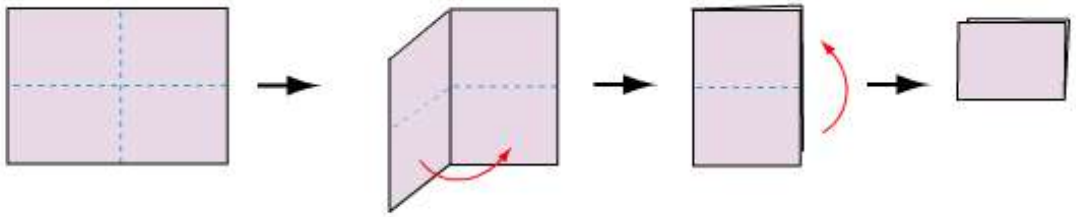


Which of the following is the top view of a triangular pyramid?

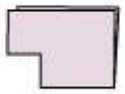




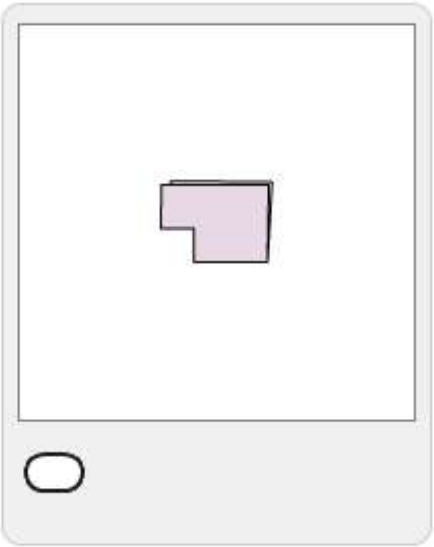
Angus folded a piece of paper in half and then folded it in half again by folding the bottom up as shown in the diagram.

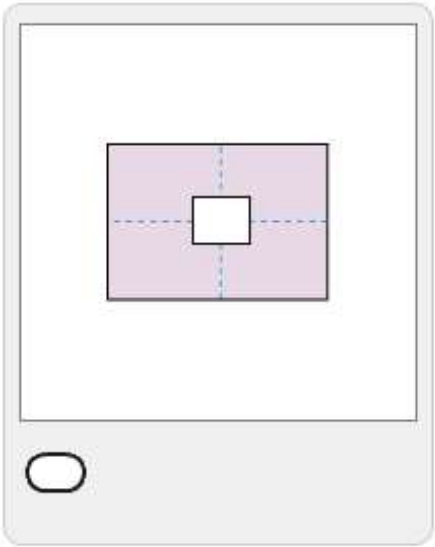


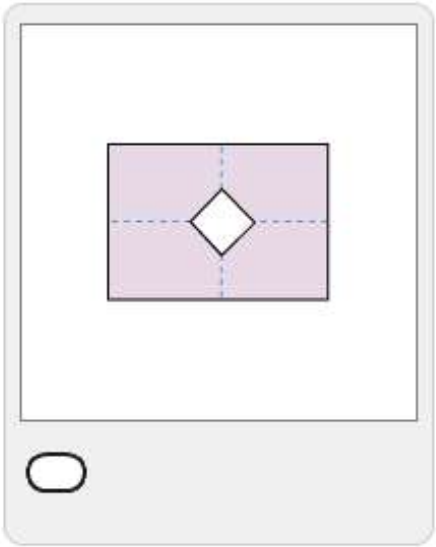
Angus then cut a piece from the bottom left corner.

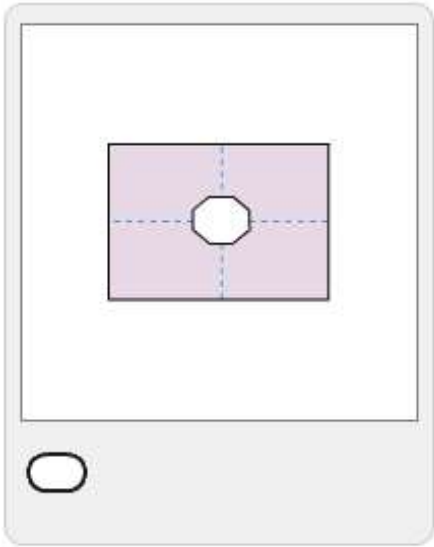


What did his paper look like when he unfolded it?

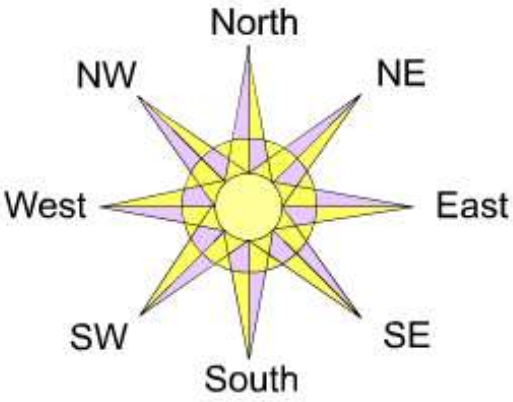








Shakira used a compass rose to find the obtuse angle between North-West and East.

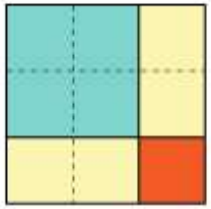


What is the size of the angle?

45°	120°	135°	145°

Nadia has tiles in three sizes: a small square, a rectangle and a large square. Two small squares are the same size as a rectangle and two rectangles are the same size as a large square.

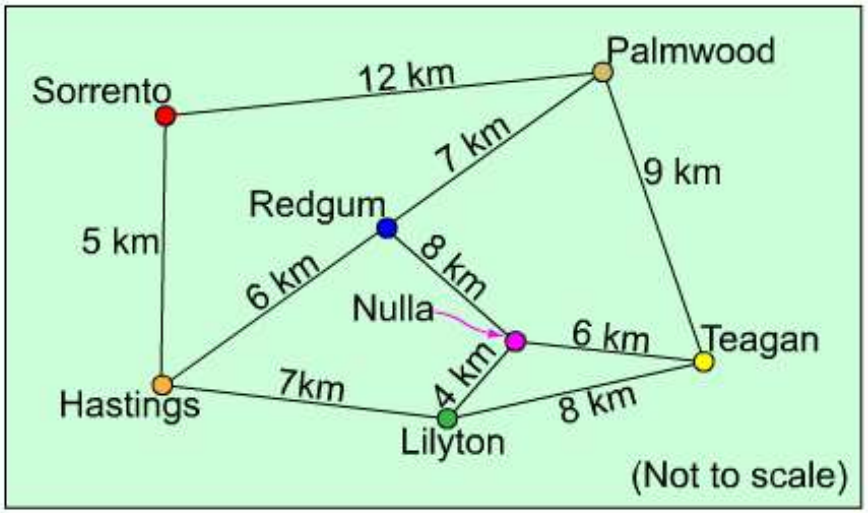
Here is an example of the tiles covering a three-by-three grid.



Which of these patterns is **not** possible?

- A four-by-four grid covered by three large squares and two rectangles
- A four-by-three grid covered by two large squares and two rectangles
- A three-by-three grid covered by two large squares and one small square
- A three-by-two grid covered by one large square and two small squares

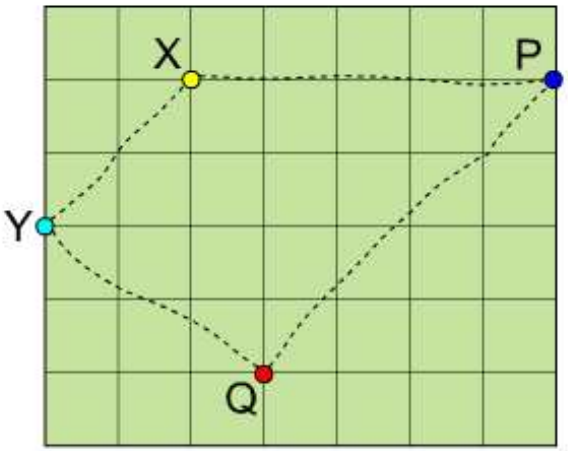
Here is a map of the towns in a region and the distances by road between them.



How much further is it to travel from Palmwood to Lilyton by passing through Sorrento and Hastings, than by the shortest possible route?

- 7 km
- 6 km
- 5 km
- 3 km

In this map each square is 1 square centimetre. Each centimetre on the map represents an actual distance of 5 kilometres. The distance on the map from P to Q is about 6 centimetres.



(Not shown actual size)

The actual distance from X to Y is about

- 15 km
- 20 km
- 25 km
- 30 km

Joey needs to form a square pyramid.

Which net could Joey use?