

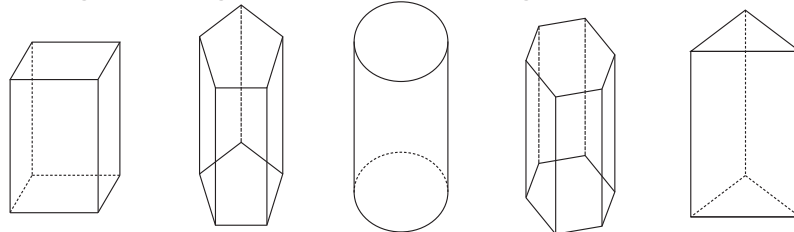
16-1

Prisms and Cylinders

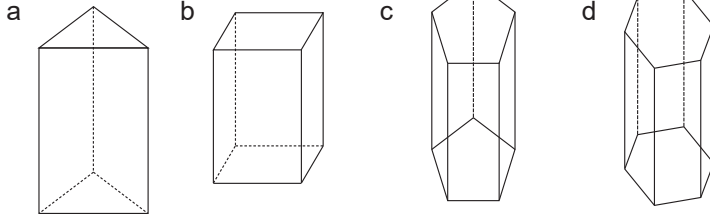
Various Solids and Prisms

Instruction Various Solids

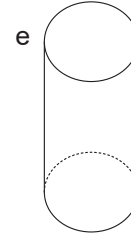
Sort the following solid figures into the two groups as follows.



Group A



Group B

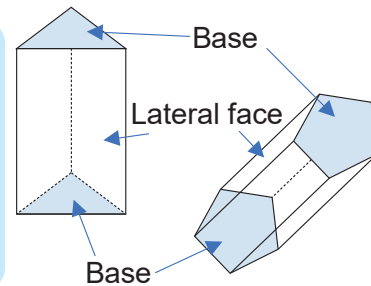


These are sorted by looking at the bottom of the shape.

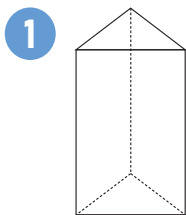


Also, how about shapes of surface? Figures in Group A are enclosed by plane. Figure in Group B has curved surface.

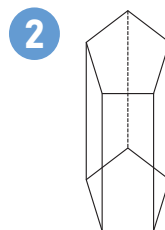
- The two parallel congruent circles of a prism are called **base**, and the rectangular or square faces around the bases are called **lateral faces**.
- When the bases are triangles, quadrilaterals, pentagons, these prisms are called **triangular prism**, **quadrangular prism**, **pentagonal prism**, respectively.



Example 1 Write the name of the following solids.

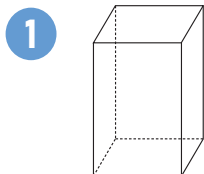


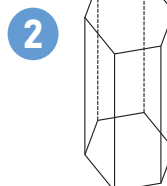
Triangular prism



Pentagonal prism

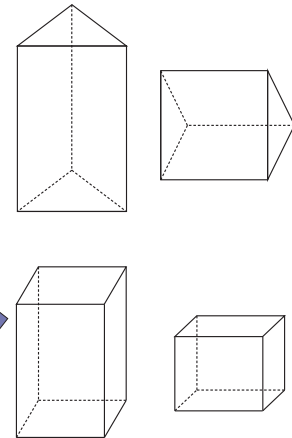
1 Write the name of the following solids.





Example 2 Complete the table below.

	Triangular prism	Quadrangular prism
Shape of bases	Triangle	Quadrilateral
Shape of lateral faces	Rectangle or square	Rectangle or square
Number of faces	$2 + 3 = 5$	$2 + 4 = 6$
Number of vertices	$3 \times 2 = 6$	$4 \times 2 = 8$
Number of edges	$3 \times 2 + 3 = 9$	$4 \times 2 + 4 = 12$

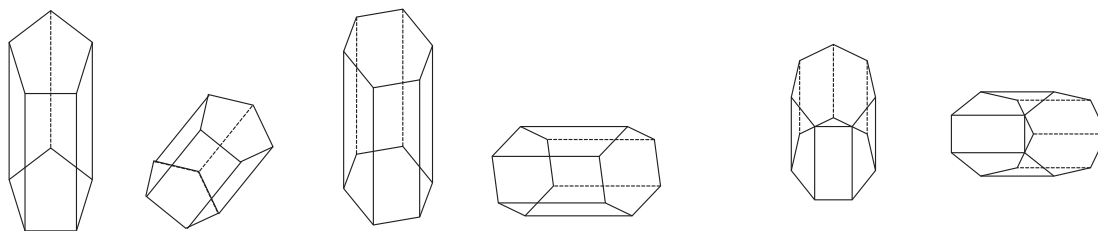


There is a relation between the number of faces, vertices, edges and shape of bases.



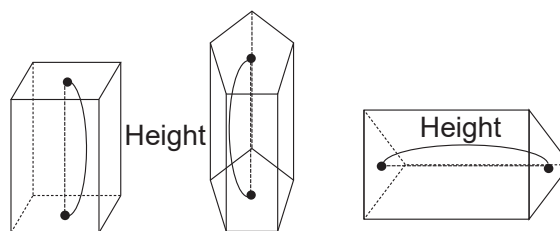
2 Complete the table below.

	Pentagonal prism	Hexagonal prism	Heptagonal prism
Shape of bases			
Shape of lateral faces			
Number of faces			
Number of vertices			
Number of edges			



Instruction Height of Prisms

● The length of the line that is perpendicular to the two bases of a prism is called the **height of the prism**.



16 - 2

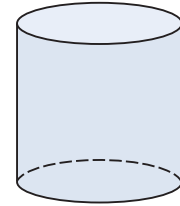
Prisms and Cylinders

Cylinders

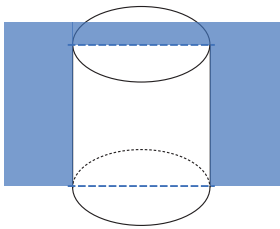
Example Answer the following questions on the solid below.

1 What kind of shape are the top and bottom faces?

Circle



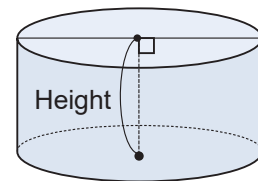
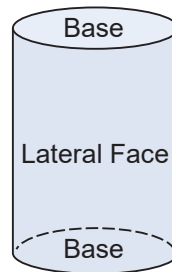
2 When you cut the figure as follows, what kind of shape you can see? .



Rectangle

Instruction Cylinder

- The two parallel congruent circles of a **cylinder** are base and the curved face around the bases is called the lateral face.
- The length of the line that is perpendicular to the two bases of a cylinder is called the **height of the cylinder**.

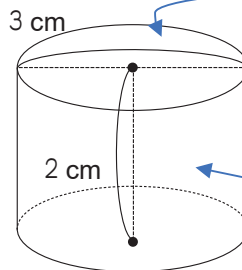


1 Answer the following questions.

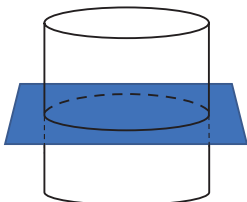
1 What is the name of the solid on the right?

2 Fill in the blanks with words

3 How many cm of the height?



2 When you cut the cylinder as follows, what kind of shape you can see?



16 - 3

Prisms and Cylinders

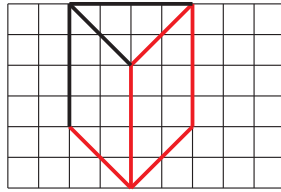
Sketch and Net of a Prism

Example 1 Finish drawing the sketch of the triangular prism as shown below.

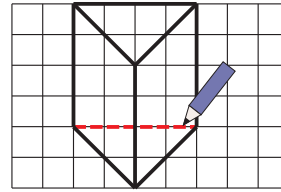
1. Draw three edges from one vertex.



2. Draw the visible edges.

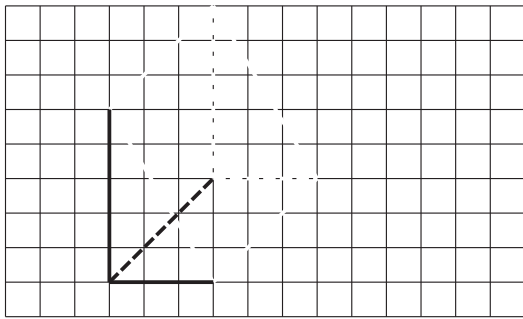


3. Draw the invisible edges using a dotted line.

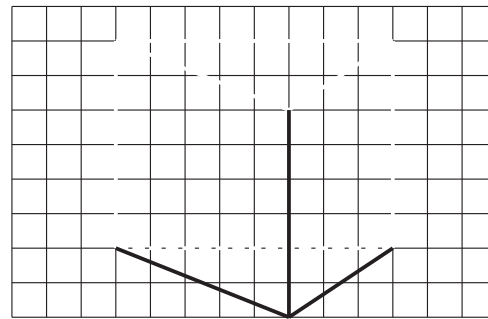


1 Finish drawing the sketch of the triangular prisms as shown below.

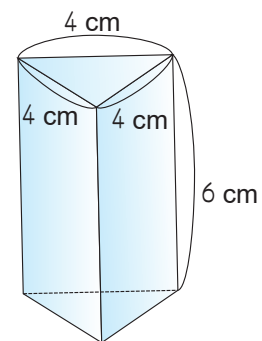
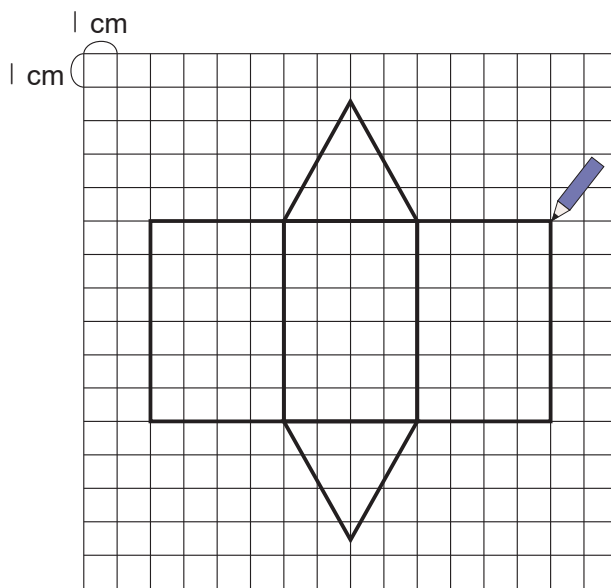
1



2



Example 2 Finish drawing the net of the triangular prism on the right.



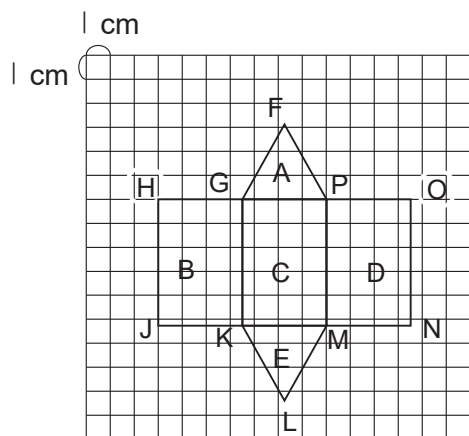
1. Draw lateral faces.	2. Draw a base.	3. Draw the other base opposite side.

2 Finish drawing the net of the triangular prism on the right.

1

2

3 The below shows a net of a triangular prism. Answer the following questions.



- Which face is the base of the prism?
- How many cm of the height?
- Circle the vertexes that match up with vertex F.

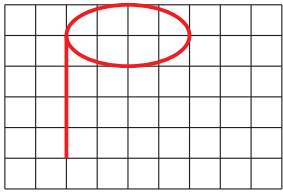
16-4

Prisms and Cylinders

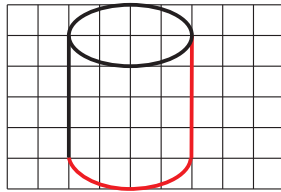
Sketch and Net of a Cylinder

Example 1 Finish drawing the sketch of the cylinder as shown below.

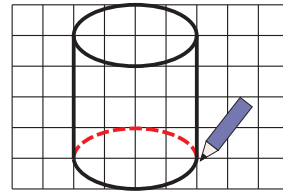
1. Draw a bottom base and an edge from one vertex.



2. Draw the visible parts.



3. Draw the invisible parts using a dotted line.

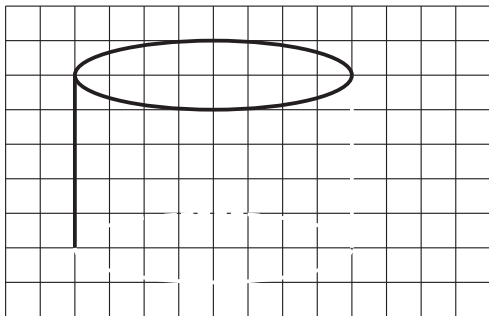


Connect dots by handwriting without a compass.

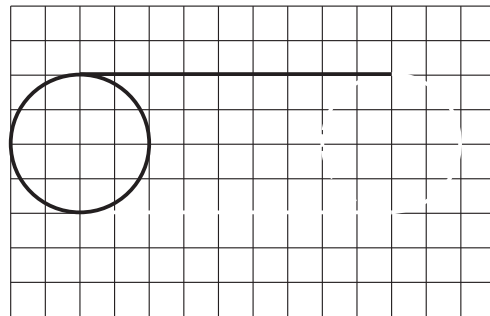


1 Finish drawing the sketch of the cylinders as shown below.

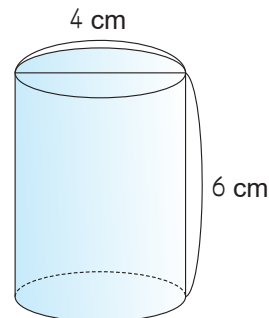
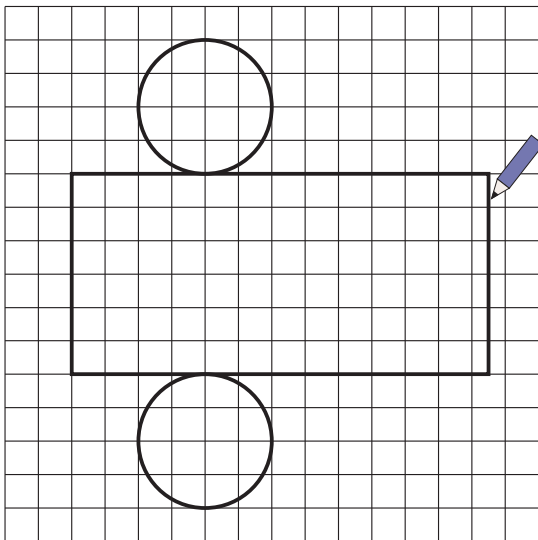
1



2




Example 2 Finish drawing the net of the cylinder on the right.



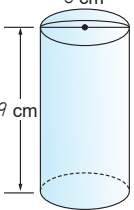
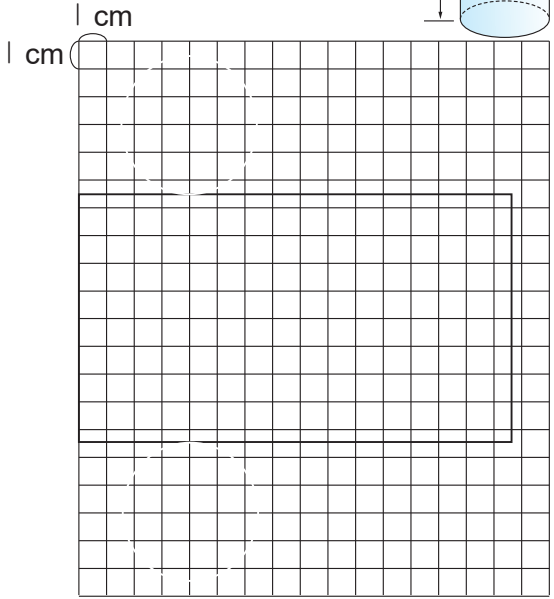
1. Draw a base.	2. Draw the lateral face.	3. Draw the other base opposite side.

The length of the lateral face is circumference, (diameter) \times 3.14

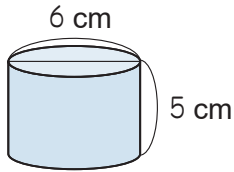
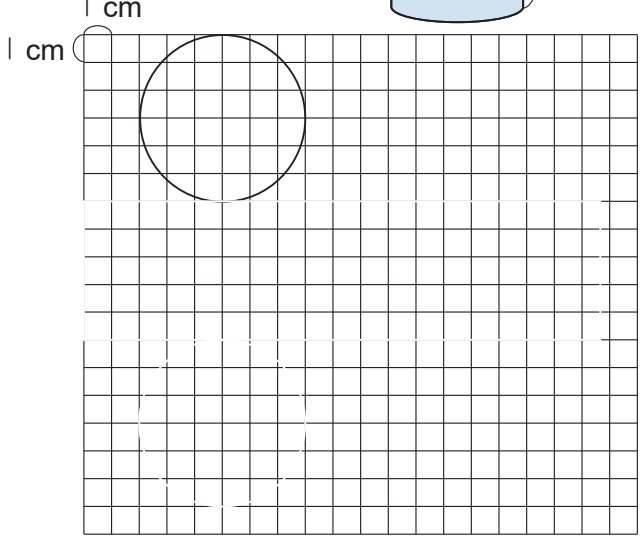


2 Finish drawing the net of the cylinder.

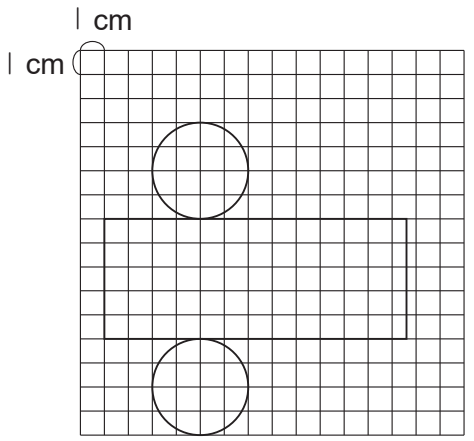
1

2

3 The below shows a net of a cylinder. Answer the following questions.



1 Which face is the base of the prism?

2 How many cm of the line AB?

Math
sentence

Answer _____

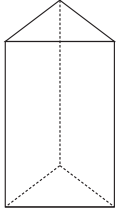
16-5

Prisms and Cylinders

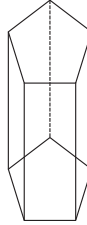
Review

1 Write the name of the following solids.

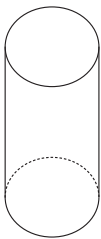
1



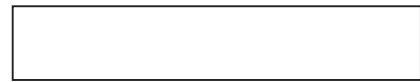
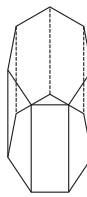
2



3

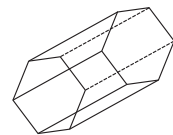
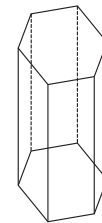
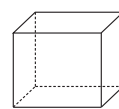
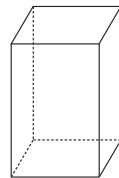
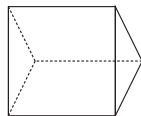
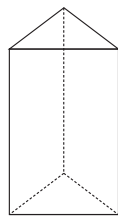


4



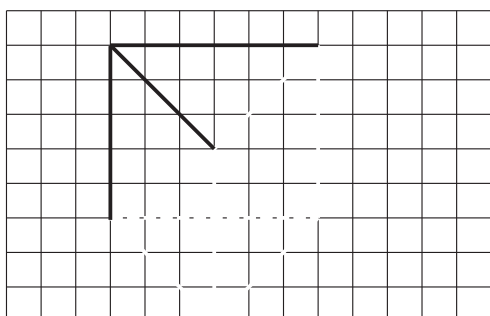
2 Complete the table below.

	Triangular prism	Quadrangular prism	Hexagonal prism
Shape of bases			
Shape of lateral faces			
Number of faces			
Number of vertices			
Number of edges			

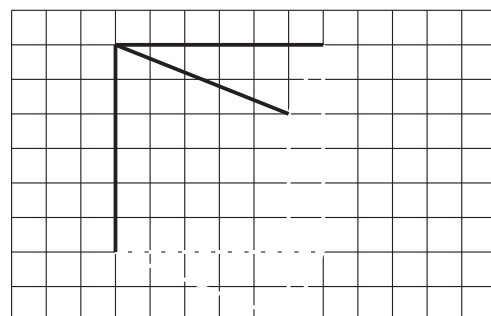


3 Finish drawing the sketch of the triangular prism as shown below.

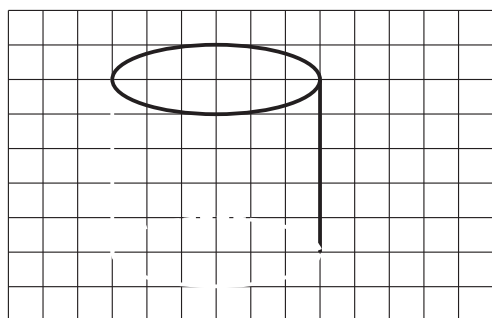
1



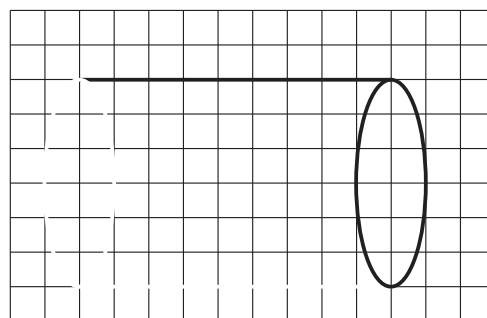
2



3



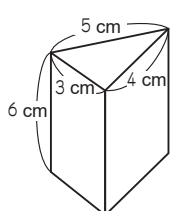
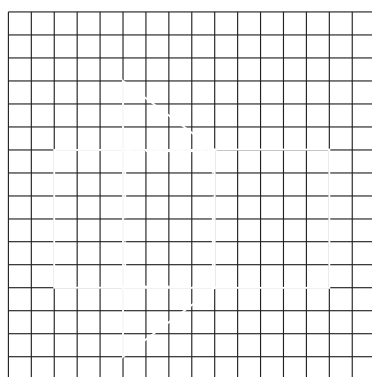
4



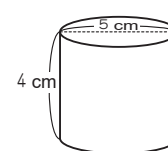
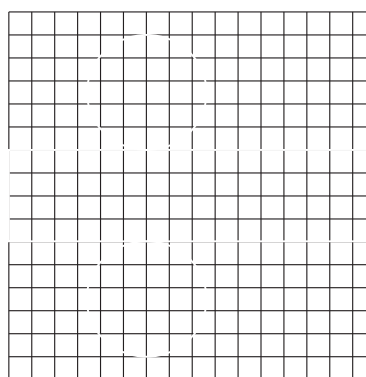
4

Finish drawing the net of the prism and cylinder below.

1

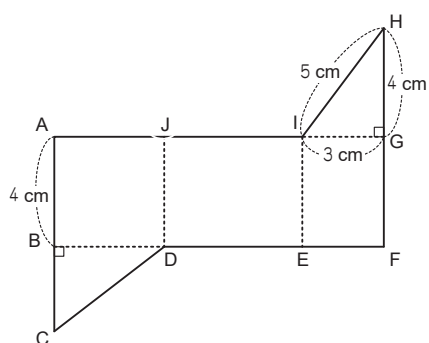


2



5

The below shows a net of a triangular prism. Answer the following questions.



1

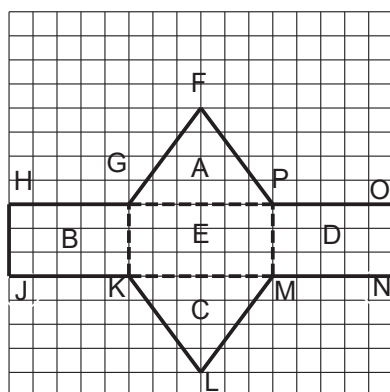
How many cm of the height?

2

Circle the vertexes that match up with vertex H.

6

The below shows a net of a triangular prism. Answer the following questions.



1

Which face is the base of the prism?

2

How many cm of the height?

3

Circle the vertexes that match up with vertex L.