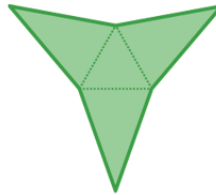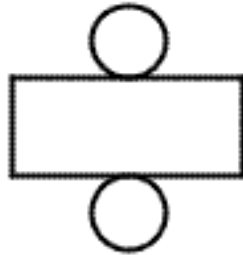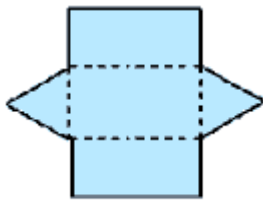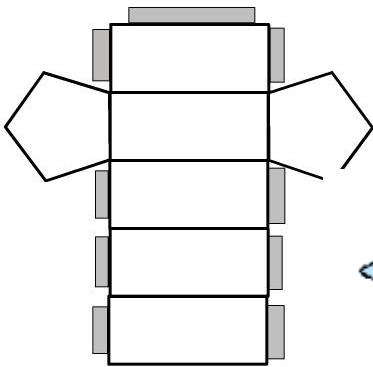# <u>Surface Area</u>

RECALL:

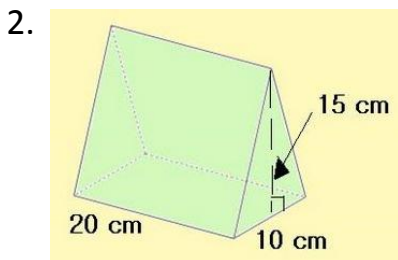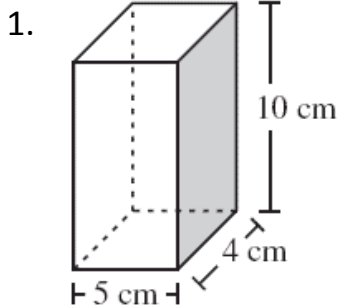A **net** is a two-dimensional picture of the surface area of a 3D solid.

What shape does each net make?
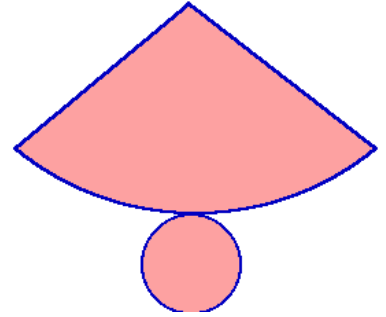
Surface area is the <u>sum of the area of all faces</u> of a 3D solid.

Whiteboards

Draw the net for each shape:

1.

10 cm

4 cm

5 cm

2.

15 cm

20 cm

10 cm

General Formulas for Surface Area of a Prism and Cylinder

SURFACE AREA OF A PRISM:

SURFACE AREA OF A CYLINDER:

Example 1:

A company has a choice between two soup cans: a can with a radius of 4cm and a height of 10cm or a can with a radius of 5cm and a height of 9cm. Which will need less paper for a label?

Example 2:

Determine the surface area of a **regular pentagonal prism** with a height of 4m, a side length of 1.5m and an apothem of 2m.

General Formulas for Surface Area of Pyramids, Cones and Spheres

Define each of the following terms:

1. "RIGHT CONE"

2. "RIGHT PYRAMID"

Write down the formulas for each of the following:

1. Surface Area of a Pyramid

2. Surface Area of a Cone

3. Surface Area of a Sphere

What patterns do you see?

Example 3:

Which will have a smaller surface area, a cone or a hexagonal pyramid with the same height (40cm) and slant height (50cm)? The cone has a radius of 30cm, and the pyramid an apothem of 30cm and a side length of 35cm.

Example 4:

A ball bearing has a volume of 6.75m^3. Determine its surface area.

Homework: