

Aim: How can we find surface area and lateral area of 3D shapes?

Do Now: 3 dimensional figures are represented in images A, B and C. Images 1 and 2 are “nets” of the 3-dimensional figures. Match each net to their 3 dimensional image. Then try to draw the missing net.

IMAGE A:

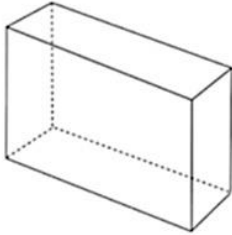


IMAGE B:

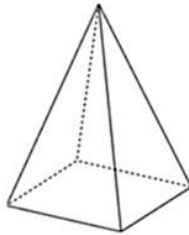


IMAGE C:



IMAGE 1:

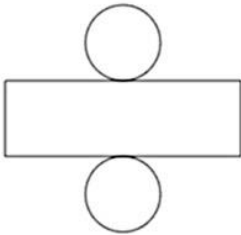
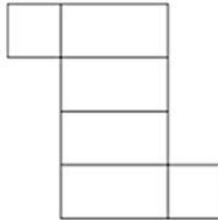


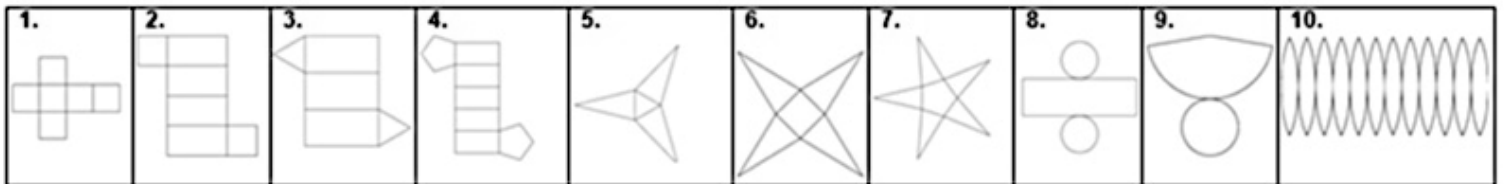
IMAGE 2:



Matchmaker, Matchmaker, Make me a Match!

Match the following flat designs (nets) with their 3-dimensional (3D) shapes.

Label each 3-D object with a name!

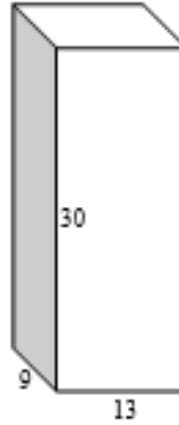
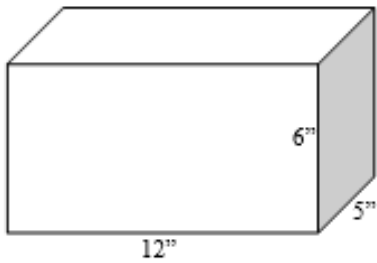


a. 	b. 	c. 	d. 	e. 	f. 	g. 	h. 	i. 	j.
		Cube							

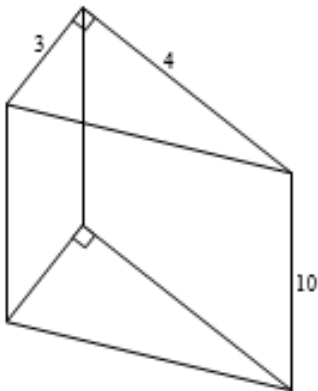
SURFACE AREA

To calculate the surface area of a figure...

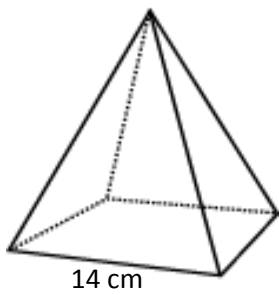
Find the surface areas of these prisms:



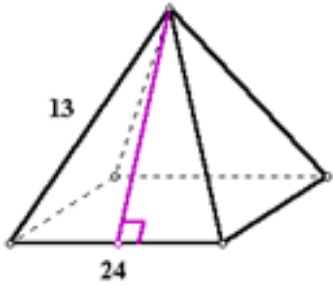
Find the surface area of this triangular prism:



If the slant height of this regular square pyramid is 12 cm, find the surface area of the pyramid.



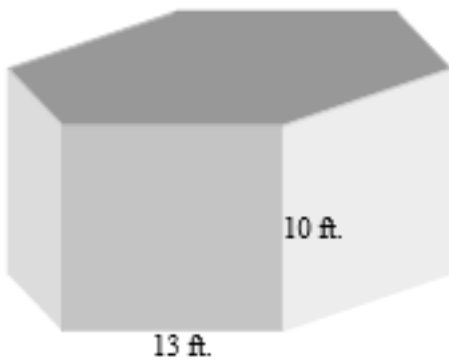
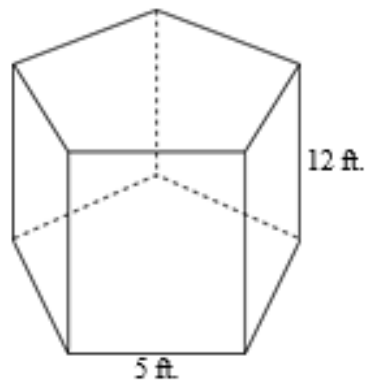
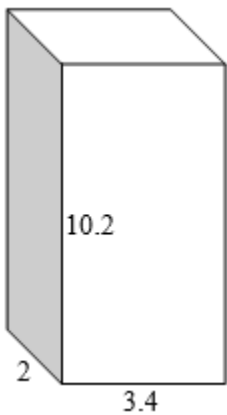
What is the surface area of this square pyramid?



LATERAL AREA

To calculate the lateral area of a figure

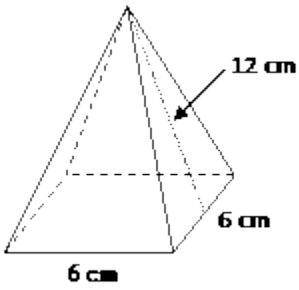
Calculate the lateral area of the figures below (assume top and bottom of rectangular prisms are bases)



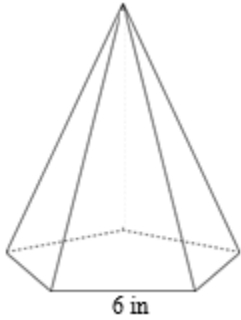
What is the lateral area of a regular decagonal (10 sides) prism whose height is 5 inches, and whose base perimeter is 60 inches?

Practice Problems

1. Calculate the lateral area of the figure below:



2. The slant height of this regular pentagonal pyramid is 10 inches. What is its lateral area?



3. A gallon of paint will cover approximately 450 square feet. An artist wants to paint all the outside surfaces of a cube measuring 12 feet on each edge. What is the least number of gallons of paint he must buy to paint the cube?

4. If the volume of a cube is 8 cubic centimeters, what is its surface area, in square centimeters?

5. A company is deciding which box to use for their merchandise. The first box measures 8 inches by 6.25 inches by 10.5 inches. The second box measures 9 inches by 5.5 inches by 11.75 inches. Which box required more material to make?

6. If each box (from #5) used material that cost \$0.03 per square inch to make, how much does a company save by choosing to make fifty boxes of the smaller box in comparison to fifty boxes of the larger box?

7. You are painting a room that is 18 ft long, 14 ft wide and 8 ft high. Find the area of the four walls that you are going to paint.

If the paint costs \$6.50 a gallon and each gallon covers 128 ft^2 of wall, how much will it cost to paint the room?