

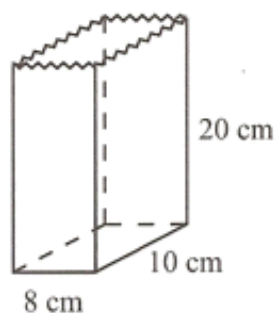
# 1.3B Surface Area: NETS of Composite Objects

October 22, 2015 11:44 AM

## Surface Area of Cubes and Rectangular Solids

The surface area of a solid is the sum of the area of all its faces. Some examples are: the amount of material to build a house, or the amount of material to make a cardboard box, or to make a tin can.

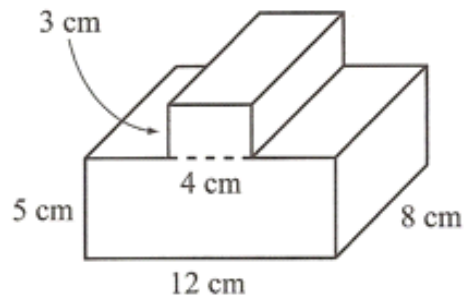
**Example 1** Consider a paper bag. How much paper is needed to make the bag?





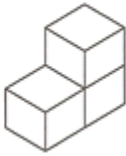
**Example 3**

Determine the surface area of the composite figure.



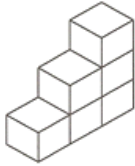
1.) Determine the surface area of the composite of cubes. Each cube has sides of 1 unit.

a)

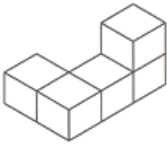


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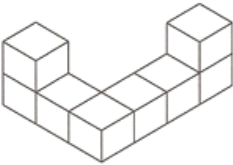
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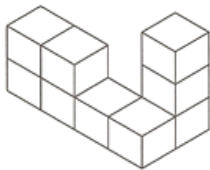
c)



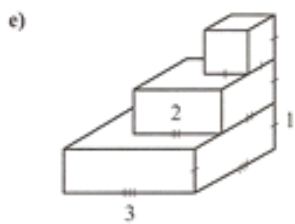
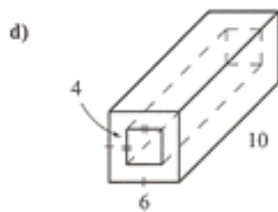
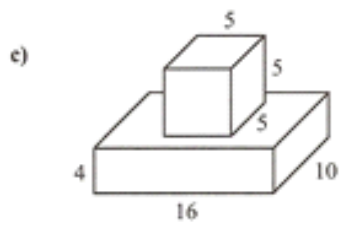
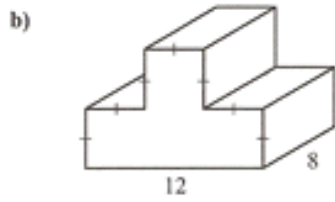
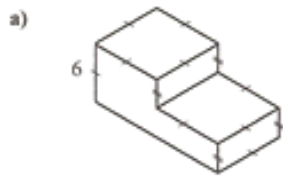
d)



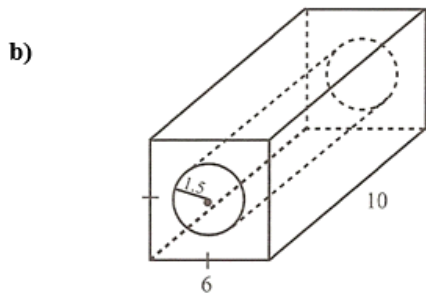
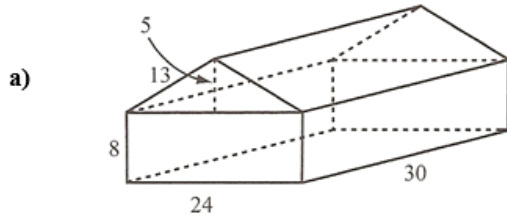
e)



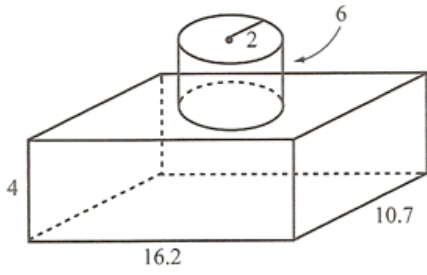
2.) Determine the surface area of the composite figure. (All measurements are in centimeters)



- 3.) Find the surface area of the following figures. All measurements are in centimetres. All prisms are right prisms. Round answers to one decimal place.

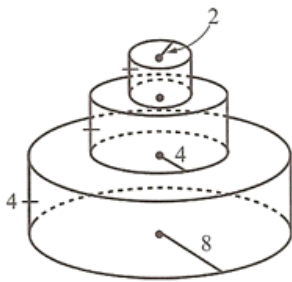


c)



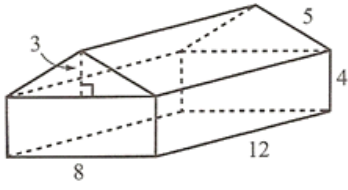
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d)



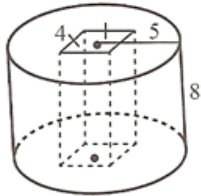
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f)



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e)

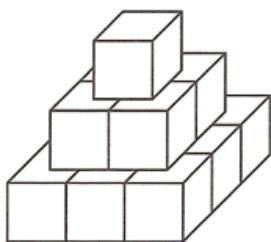


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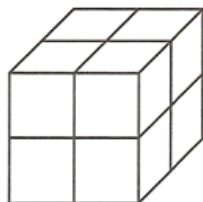
- 4) Ann wants to wallpaper the walls of her bedroom. The rectangular room is 12 ft. by 15 ft. with height of the wall 8 ft. high. If a roll of wallpaper is 3 ft. wide and 50ft. long, how many rolls of wallpaper are needed? (*can't buy part of a roll, and ignore doors and windows*)
- 5) Jessica wants to tile the kitchen floor with tiles that are 20 cm square. If the kitchen measures 2.5 m by 3 m, how many tiles are needed if 10% is added for waste?
- 6) Andy has a contract to paint the walls and ceiling of 30 motel rooms each measuring 3.5 m by 4.2 m with height of 2.1 m. If a 4-litre pail of paint covers  $40\text{ m}^2$  and costs \$18.95, what is the cost of paint used?
- 7) What happens to surface area if you:
- a) Double each side of a cube?
  - b) Triple each side of a cube?
  - c) Leave one side the same length, double another side and triple the third side?

- 8) If you have  $91$  blocks and build a pyramid in the same pattern as the diagram shown, how many blocks are on the bottom layer?



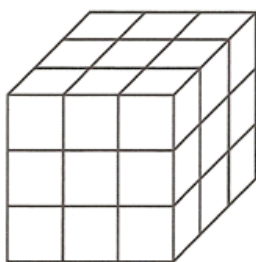
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- 9) In the following diagram how many pieces have three sides showing?



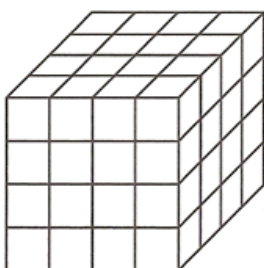
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- 10) In the following diagram how many pieces have:



- a) Three sides showing? \_\_\_\_\_
- b) Two sides showing? \_\_\_\_\_
- c) One side showing? \_\_\_\_\_
- d) Zero sides showing? \_\_\_\_\_

- 11) In the following diagram how many pieces have:



- a) Three sides showing? \_\_\_\_\_
- b) Two sides showing? \_\_\_\_\_
- c) One side showing? \_\_\_\_\_
- d) Zero sides showing? \_\_\_\_\_