

1.4 Surface Areas of Other Composite Objects

In the last section we worked exclusively with rectangular prisms. Now we will be finding the surface area of composite objects that include shapes such as cylinders and right triangular prisms.

We need to know a few new formulas (remember we did a basic area review before we started this unit so it shouldn't be too bad)

Area of a triangle = $.5 ab$

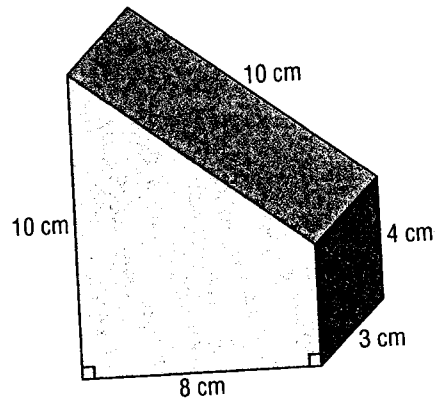
Area of a cylinder = $\pi r^2 + 2\pi rh$ (this is the area of one base + the area of the curved surface) If you need the area of the top and the bottom of the cylinder then you must multiple the first part of the formula by 2.

We are going to have to focus on "overlap" again. Remember that is the part of the composite object that is NOT exposed. We have to remember to NOT count the part that is not showing when we calculate surface area. There are several strategies to solve for surface area. You are going to figure out the one that makes sense to you and works for you.

** In this section we will be seeing triangular prisms and we need to keep in mind that if we don't have the height of the triangle we might have to use the Pythagorean Theorem to figure it out.

$$a^2 + b^2 = c^2$$

Example One: First Step is to figure out what shapes make up the faces of this object.



Example Two: Think about how many circles are exposed and how much of the bottom cake is covered.

Two round cakes have diameters of 14 cm and 26 cm, and are 5 cm tall. They are arranged as shown. The cakes are covered in frosting. What is the area of frosting?

