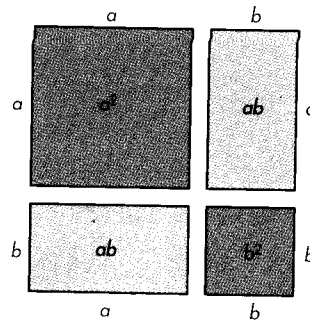
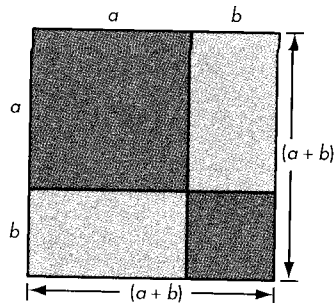


Take Another Look 11.3

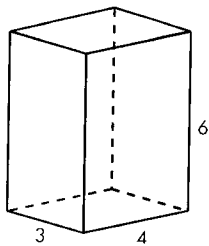
You may be familiar with the area model of the expression $(a + b)^2$, shown below. Draw or build a volume model of the expression $(a + b)^3$. How many pieces does your model have? What's the volume of each type of piece? Use your model to write the expression $(a + b)^3$ in expanded form.



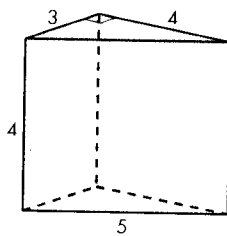
Exercise Set 11.3

Find the volume of each right prism or right cylinder named in Exercises 1-6. All measurements are given in centimeters. Round answers to two decimal places.

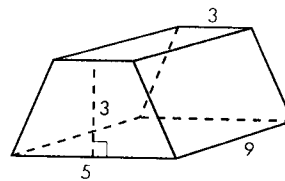
1. Rectangular prism



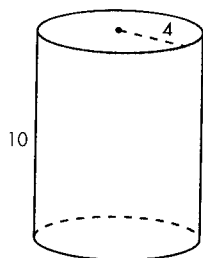
2.* Right triangular prism



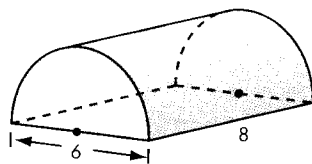
3.* Trapezoidal prism



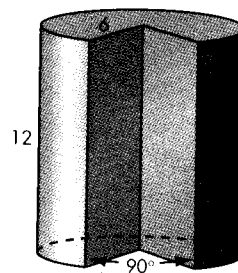
4. Cylinder



5.* Semicircular cylinder



6.* Cylinder with a 90° slice removed

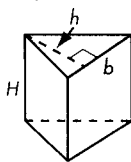


7. Draw and label two different rectangular prisms with volumes of 288 cm^3 .

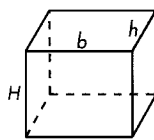
8. Draw and label two different circular cylinders with volumes of $1152\pi \text{ cm}^3$.

9. Use the information about the base and height of each solid to find the volume. All measurements are given in centimeters.

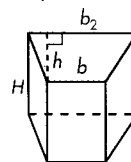
Triangular prism



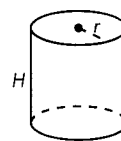
Rectangular prism



Trapezoidal prism



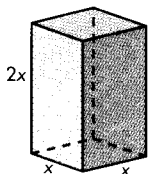
Cylinder



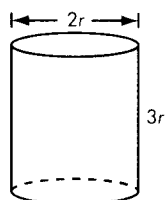
Information about base of solid	Height of solid	Use	Use	Use	Use
$b = 6, b_2 = 7, h = 8, r = 3$	$H = 20$	Use $b, h, H.$	Use $b, h, H.$	Use $b, b_2, h, H.$	Use $r, H.$
$b = 9, b_2 = 12, h = 12, r = 6$	$H = 20$	a.* $V = -?-$	d. $V = -?-$	g. $V = -?-$	j. $V = -?-$
$b = 8, b_2 = 19, h = 18, r = 8$	$H = 23$	b. $V = -?-$	e. $V = -?-$	h. $V = -?-$	k. $V = -?-$
		c. $V = -?-$	f. $V = -?-$	i. $V = -?-$	l. $V = -?-$

In Exercises 10-12, express the volume of each solid with the help of algebra. All measurements are given in centimeters. Each quadrilateral is a rectangle.

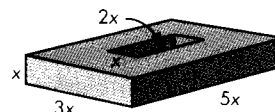
10.



11.



12.



For Exercises 13-17, sketch and label each solid described, then find the volume.

13. A right rectangular prism. The base measures 12 cm by 16 cm. The height is 4 cm.
14. A right trapezoidal prism. The trapezoidal base has a height of 4" and bases that measure 8" and 12". The height of the prism is 24".
- 15.* A right circular cylinder with a height of T . The radius of the base is \sqrt{Q} .
16. A chocolate cake of diameter 24 cm and height of 14 cm that has a slice missing whose vertex angle measures 45° .
- 17.* A right triangular prism with height $K + 7$. The base is determined by an isosceles right triangle with a hypotenuse of $K\sqrt{2}$.
18. Although the Exxon Valdez oil spill (11 million gallons of oil) is perhaps one of the most notorious oil spills to foul the North American continent, it was minor compared to oil spills during the 1991 Persian Gulf War, in which about 250 million gallons of crude were spilled. A gallon is 0.13368 cubic feet. How many swimming pools $20' \times 30' \times 5'$ deep could be filled with 250 million gallons of crude oil?

