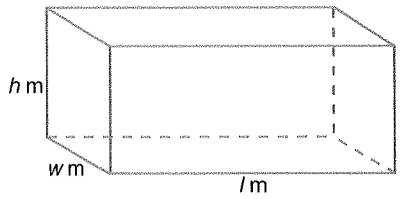
NAME _____

Lesson 1 Volume of Rectangular Prisms PRE-ALGEBRA

The *volume measure (V) of a rectangular prism* is the product of the *area measure of the base (B)* and the measure of the *height (h)*. $V = B \times h$



Find V if $l = 6.5$, $w = 4$, and $h = 3$.

$V = B \times h$

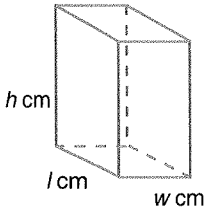
$= l \times w \times h$

$= 6.5 \times 4 \times 3$

$=$ _____ $\times 3$

$=$ _____

The volume is _____ m^3.



Find V if $l = 4$, $w = 3$, and $h = 6$.

$V = B \times h$

$= l \times w \times h$

$=$ _____ $\times$ _____ $\times$ _____

$=$ _____ $\times$ _____

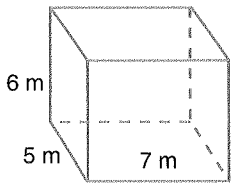
$=$ _____

The volume is _____ cm^3.

Find the volume of each rectangular prism.

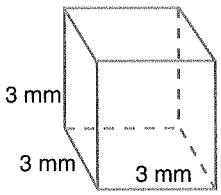
1.

a



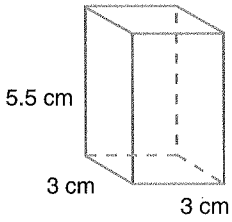
_____ m^3

b



_____ mm^3

c



_____ cm^3

Complete the table for each rectangular prism described below.

	Length	*Width*	*Height*	*Volume*
2.	8 m	6 m	3 m	_____ m^3
3.	7.5 mm	4 mm	6 mm	_____ mm^3
4.	3.2 cm	3.2 cm	4 cm	_____ cm^3
5.	5.25 m	2.25 m	3 m	_____ m^3
6.	3.5 cm	2.5 cm	1 cm	_____ cm^3

CHAPTER 12

Lesson 1 Problem Solving PRE-ALGEBRA

Solve each problem.

1. The bottom of a box is 10.5 cm long and 5 cm wide. The box is 3 cm^2 high. What is the volume of the box?

The volume is _____ cm^3.

2. A box is 12 cm wide, 18 cm long, and 6 cm deep. What is its volume?

The volume is _____ cm^3.

3. Assume each dimension in problem **2** is doubled. What would be the volume of the box?

It would be _____ cm^3.

4. A cube with each dimension 10 mm has a volume of 1 cm^3. How many cubic millimetres are in 1 cm^3?

_____ mm^3 are in 1 cm^3.

5. A cube with each dimension 100 cm has a volume of 1 m^3. How many cubic centimetres are in 1 m^3?

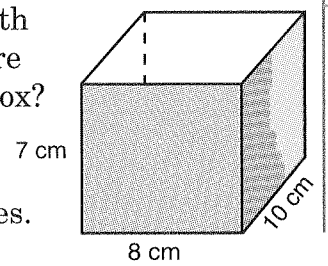
_____ cm^3 are in 1 m^3.

6. Vicky has a box that is 1 m high, 1.5 m wide, and 2 m long. Jeff has a box that measures 1.5 m along each edge. Whose box has the greater volume? How much greater is it?

_____ box has the greater volume.

It is _____ m^3 greater.

7. Anne has 500 cubes, each with edges 1 cm long. How many more cubes does she need to fill the box?



She needs _____ more cubes.

1.	
2.	3.
4.	5.
6.	
7.	

NAME _____

Lesson 2 Volume of Triangular Prisms PRE-ALGEBRA

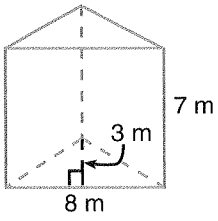
The *volume measure (V) of a triangular prism* is the product of the *area measure of the base (B)* and the measure of the *height (h)*. $V = B \times h$

$V = B \times h$

$= \frac{1}{2} \times 8 \times 3 \times 7$

$= 12 \times 7$

$=$ _____



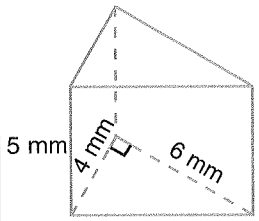
The volume is _____ m^3.

$V = B \times h$

$= \frac{1}{2} \times \underline{4} \times \_\_\_\_ \times \_\_\_\_$

$=$ _____ $\times$ _____

$=$ _____

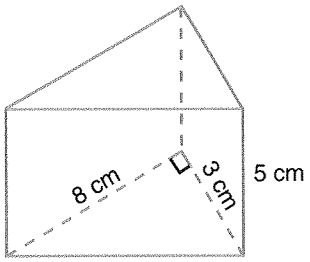


The volume is _____ mm^3.

Find the volume of each triangular prism.

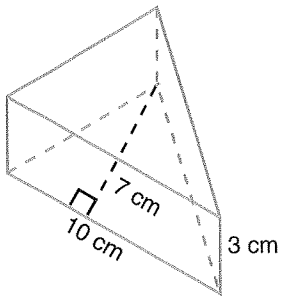
1.

a



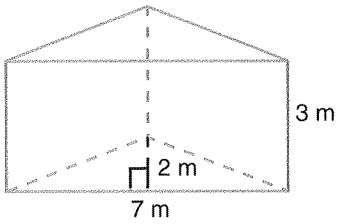
_____ cm^3

b



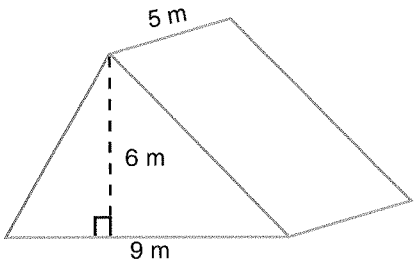
_____ cm^3

c

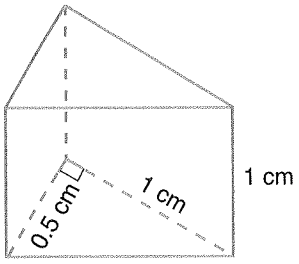


_____ m^3

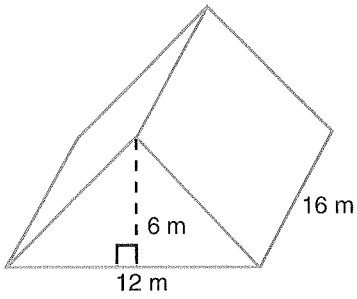
2.



_____ m^3



_____ cm^3



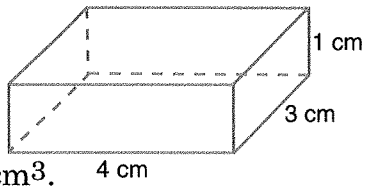
_____ m^3

CHAPTER 12

Lesson 2 Problem Solving PRE-ALGEBRA

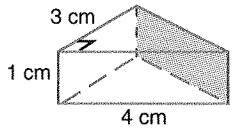
Solve each problem.

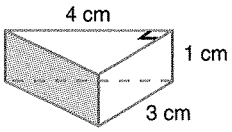
1. Find the volume of the rectangular prism shown at the right.



The volume is _____ cm^3.

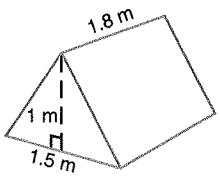
2. The rectangular prism in problem **1** was cut to form these two triangular prisms. What is the volume of each triangular prism?





The volume is _____ cm^3.

3. The tent is shaped like a triangular prism. Find its volume.

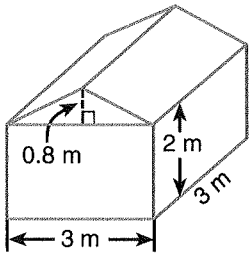


The volume is _____ m^3.

4. A wastebasket shaped like a triangular prism has a volume of 162 000 cm^3. The area of its base is 1350 cm^2. What is the height of the wastebasket?

The height is _____ cm.

5. The top part of the tent is shaped like a triangular prism. Find the volume of the top part. The bottom part of the tent is shaped like a rectangular prism. Find the volume of the bottom part. What is the volume of the tent?



The volume of the top part is _____ m^3.

The volume of the bottom part is _____ m^3.

The volume of the tent is _____ m^3.

1.

2.

3.

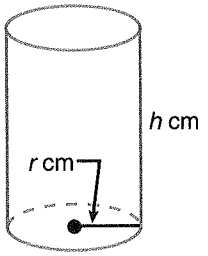
4.

5.

NAME _____

Lesson 3 Volume of Cylinders PRE-ALGEBRA

The *volume measure (V) of a cylinder* is the product of the *area measure of the base (B)* and the measure of the *height (h).* $V = B \times h$



Find V if $r = 2$ and $h = 6$.

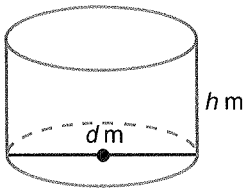
$V = B \times h$

$= \pi \times r \times r \times h$

$\doteq 3.14 \times 2 \times 2 \times 6$

$\doteq 75.36$

The volume is about 75.36 cm^3.



Find V if $d = 8$ and $h = 5$.

(Since $d = 8$, $r = 4$.)

$V = B \times h$

$= \pi \times r \times r \times h$

$\doteq 3.14 \times \_\_\_\_ \times \_\_\_\_ \times \_\_\_\_$

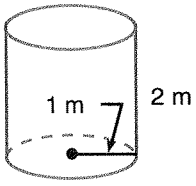
$\doteq$ _____

The volume is about _____ m^3.

Find the approximate volume of each cylinder. Use 3.14 for π.

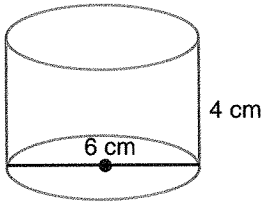
1.

a



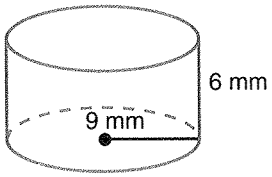
about _____ m^3

b



about _____ cm^3

c



about _____ mm^3

Complete the table for each cylinder described below. Use 3.14 for π.

	Diameter	*Radius*	*Height*	*Approximate volume*
2.	_____ m	3 m	6 m	_____ m^3
3.	_____ cm	7 cm	4 cm	_____ cm^3
4.	10 m	_____ m	3 m	_____ m^3
5.	_____ cm	5 cm	2 cm	_____ cm^3
6.	18 m	_____ m	3 m	_____ m^3

CHAPTER 12

Lesson 3 Problem Solving PRE-ALGEBRA

Solve each problem. Use 3.14 for π.

1. A coffee can has a 7.5-cm radius and is 20 cm high. What is the volume of the coffee can?

The volume is about _____ cm^3.

2. Suppose the can in problem **1** is one-half filled with coffee. How many cubic centimetres of coffee are in the can?

There are about _____ cm^3 of coffee.

3. A cylindrical container has a diameter of 4 cm and is 12 cm high. What is its volume?

Its volume is about _____ cm.

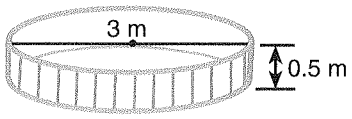
4. Suppose the container in problem **3** had a diameter of 12 cm and was 4 cm high. What would its volume be?

Its volume would be about _____ cm^3.

5. A cylindrical tank has a radius of 8 m and is 4 m high. What is the volume of the tank?

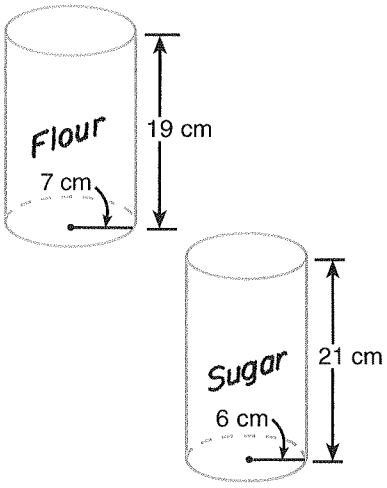
The volume is about _____ m^3.

6. Find the volume of the wading pool.



The volume is about _____ m^3.

7. Which can has the greater volume? How much greater?



The _____ can has the greater volume.

It is about _____ cm^3 greater.

1.	2.
3.	4.
5.	6.
7.	

NAME _____

CHAPTER 12 PRACTICE TEST

Volume

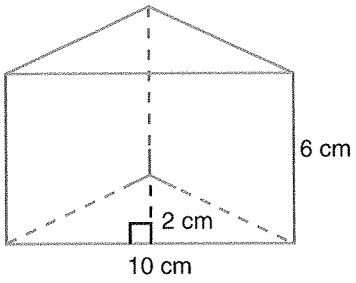
Complete the table for each rectangular prism described below.

	Length	*Width*	*Height*	*Volume*
1.	6 m	4 m	8 m	_____ m^3
2.	7 cm	7 cm	7 cm	_____ cm^3
3.	9 m	7.5 m	6 m	_____ m^3
4.	5.5 mm	3.5 mm	2 mm	_____ mm^3

Find the volume of each triangular prism.

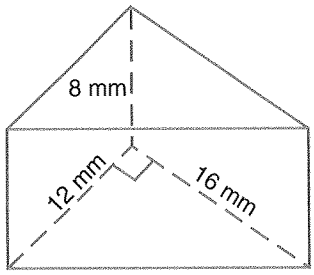
5.

a



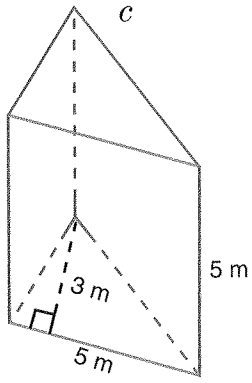
_____ cm^3

b



_____ mm^3

c



_____ m^3

Complete the table for each cylinder described below. Use 3.14 for π.

	Diameter	*Radius*	*Height*	*Approximate volume*
6.	_____ mm	12 mm	8 mm	_____ mm^3
7.	16 cm	_____ cm	19 cm	_____ cm^3
8.	_____ m	10 m	12 m	_____ m^3
9.	21 m	_____ m	14 m	_____ m^3

NAME _____

CHAPTER 13 PRETEST
Graphs and Probability

Use the circle graph at the right to answer each question.

1. How many adults take the subway to work? _____ adults

2. How many adults drive a car to work? _____ adults

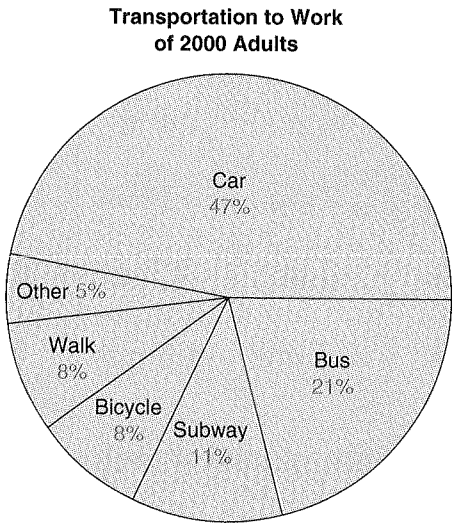
3. How many adults walk to work? _____ adults

4. How many more adults take the bus to work than ride a bicycle to work? _____ adults

5. What is represented by the "other" category in the circle graph?

_____

_____



Find the mean, median, and mode of each set of numbers.

	a	*b*
6.	53, 67, 49, 52, 49, 73, 55, 80, 62	35.6, 42.8, 26.1, 30.4, 42.8, 59.3
	mean: _____	mean: _____
	median: _____	median: _____
	mode: _____	mode: _____

To choose a teacher, you draw one of the cards below. Write the probability in simplest form that you will pick:

7. Mr. Alvers

_____

8. a man

_____

9. Mr. or Mrs. Von

_____

10. a person who has a first name of Pat

_____

11. a person who does **not** have a first name of Ken

_____

Mrs. Pat Von	Mr. Ken Alvers
Mr. Ken Bruns	Ms. Kari Yoshita
Mr. Pat Wittier	Mr. Ken Von