New Vocabulary
analog clock
hour hand
minute hand
digital clock
elapsed time

Time

Name _____ Class _____ Date _____

GET STARTED

1. 5, _____, 15, _____, 25, 30, _____, 40, 45, _____, 55

2. 

   a. _____:_____

   b. _____

3. 

   a. _____:_____

   b. _____

4. 
   a.m.

   
   a.m.

   begin _____ end _____

   elapsed time:

   _____ hours _____ minutes

5. Sally goes to lunch at 11:50 a.m. School ends at 3:25 p.m. How much time is between those two events?

   elapsed time:

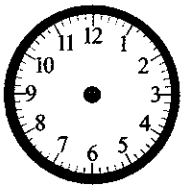
   _____ hours _____ minutes

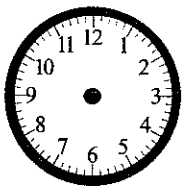
BUILD THE CONCEPT

begin time: 9:15 a.m.

elapsed time: 1 hour 25 minutes

end time: _____


a.m.
begin time


a.m.
end time

TRY IT TOGETHER

Write the time shown on the clock.

6 

a. _____:_____

b. _____

Solve the problem.

7 The students began decorating for the school dance at 10:20 a.m. They finished decorating at 12:30 p.m. How long did it take the students to decorate?

_____

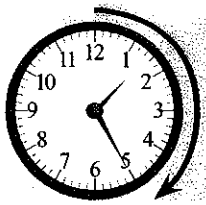
WORK ON YOUR OWN

HOW TO

Read an Analog Clock

Using Symbols

1.  1:

2.  1:25

Using Words

The short hand is the hour hand. If the hour hand is between numbers, the number before tells the hour.

The long hand is the minute hand. To tell the number of minutes, start at 12. Use the numbers to count by 5. Then count on by 1 any minutes past a number.

Read a Digital Clock

hours — 12:25 — minutes

The hour appears before the colon, and the minutes appear after the colon.

Find Elapsed Time

1. begin time: 8:30 a.m.
   end time: 9:45 a.m.

Start at the begin time.

2. 8:30 a.m. → 9:30 a.m. → 1 hour
   9:30 a.m. → 9:45 a.m. → 15 minutes

Count the complete hours, then count the minutes to the end time.

3. elapsed time:
   1 hour 15 minutes

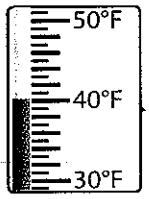
The elapsed time is the amount of time between the begin time and the end time.

New Vocabulary
degrees Fahrenheit (°F)
degrees Celsius (°C)

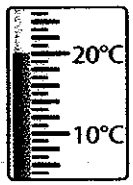
Temperature

Name _____ Class _____ Date _____

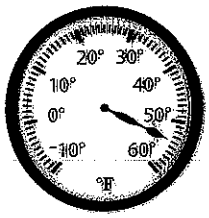
GET STARTED

1. 

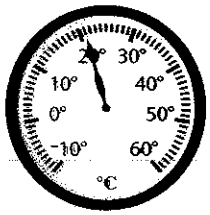
_____°F

2. 

_____°C

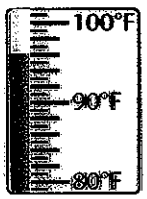
3. 

_____°F

4. 

_____°C

5. The thermometer shows the **temperature outside**. This morning's temperature was 18°F cooler. **What was the morning temperature?**



Temperature outside: _____°F

Morning temperature: _____ − _____ = _____°F

BUILD THE CONCEPT

The following show the degrees Fahrenheit and **degrees Celsius temperature measures.**


32°F
0°C


86°F
30°C


212°F
100°C

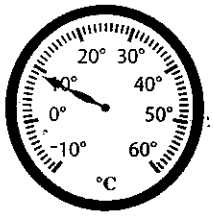
Determine the **correct** temperature measure of the pictures below.


150°F
or
24°C

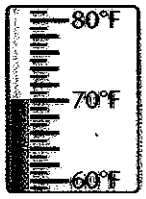

79°F
or
2°C

TRY IT TOGETHER

Read each thermometer to find the temperature.

6 

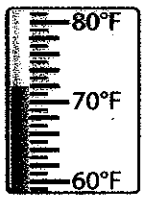
_____°C

7 

_____

Solve the problem.

8 The temperature for a day in May is shown. Last year, the temperature on this day was 8°F warmer. What was the temperature last year on this date?

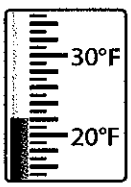


_____ + _____ = _____°F

WORK ON YOUR OWN

HOW TO

Read Temperature in Degrees Fahrenheit or Degrees Celsius

Using Symbols	Using Words
1.  Scale: counts by 1 Units: degrees Fahrenheit	Identify the scale and units on the thermometer.
2. 22°F	Determine where on the scale the red line ends. Use the correct units.

Find Change in Temperature

Using Symbols	Using Words
Original temperature: 30°C	If the final temperature is cooler than the original temperature, subtract.
Change: 8°C cooler	
Final temperature: 30 − 8 = 22°C	If the final temperature is warmer than the original temperature, add.

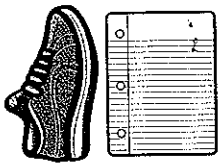
Estimating Length Using Customary Units

Name _____ Class _____ Date _____

GET STARTED

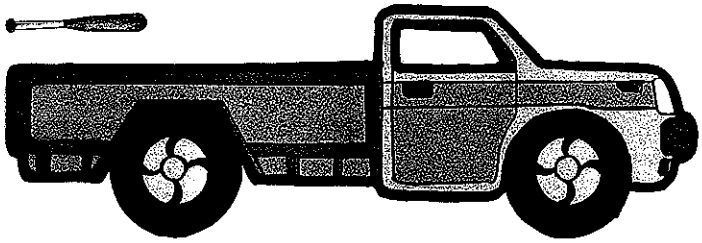
1. 1 foot 1 inch
   1 foot 1 yard

2. **a.** tennis shoe: about _____

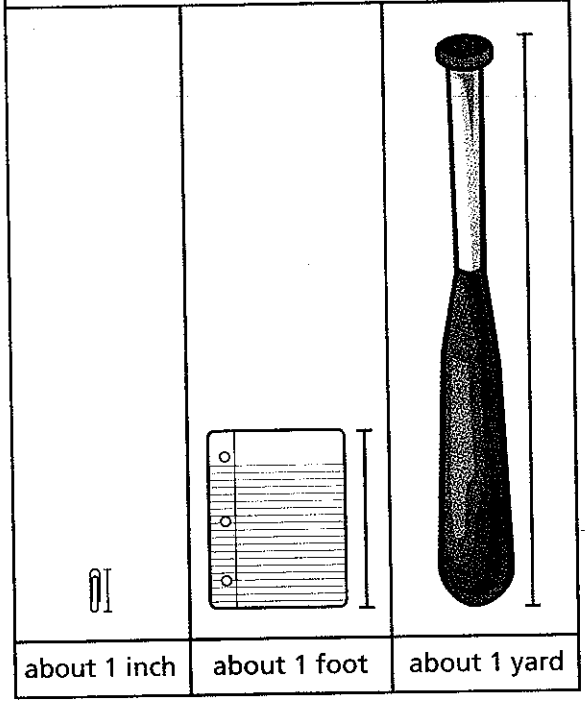


b. crayons: about _____

3. length of a truck: about _____



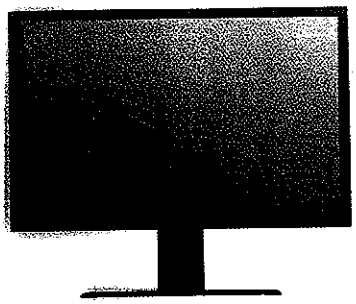
Benchmarks for Estimating Length

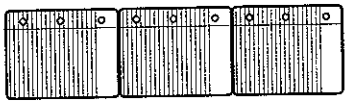


about 1 inch	about 1 foot	about 1 yard

BUILD THE CONCEPT

Erik got a new television for his birthday. Is Erik's television about 3 **feet** wide or 3 inches wide?





3 feet
(about 3 sheets of paper)

3 inches
(about 3 small paper clips)

Erik's new television is about 3 _____ wide.

TRY IT TOGETHER

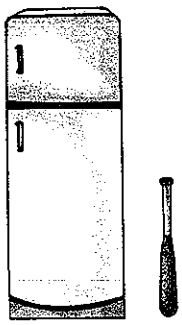
Estimate each length.

4 About how many inches is the width of a hand?

_____

5 About how tall is a refrigerator?

_____



6 About how many feet is the length of a car's license plate?

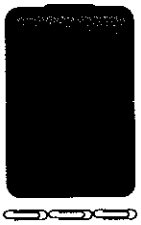
_____

WORK ON YOUR OWN

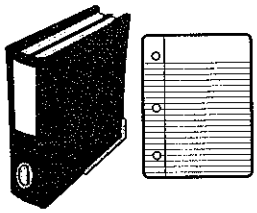
HOW TO

Estimate Length Using Benchmarks in Customary Units

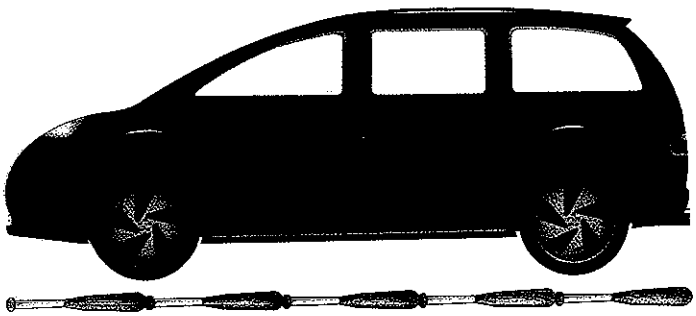
Using Symbols



about 3 inches



about 1 foot



about 5 yards

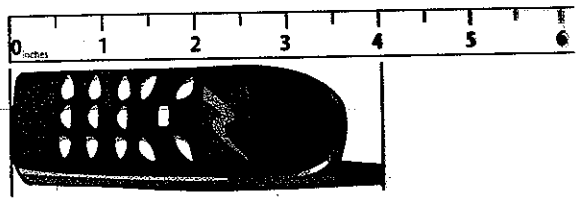
Using Words

Compare the object with another object whose length is known. Then estimate the measurement.

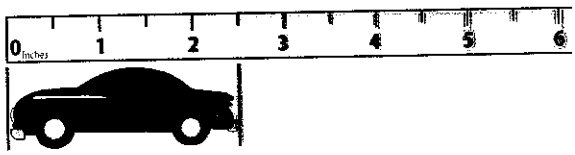
Measuring to the Nearest $\frac{1}{2}$ Inch

Name _____ Class _____ Date _____

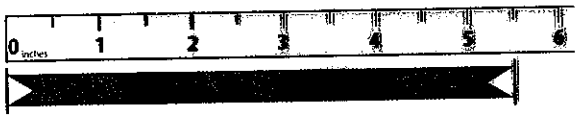
GET STARTED

1. 

_____ inches

2. 

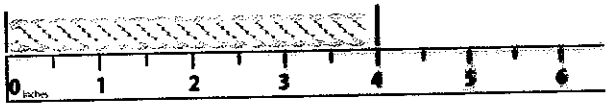
_____ inches

3. 

_____ inches

BUILD THE CONCEPT

A ruler can be used to **measure length in inches.**



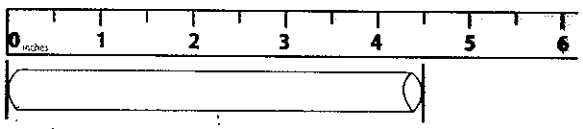
The rope is _____ **inches long.**

A small paper clip can be used to estimate length in inches.

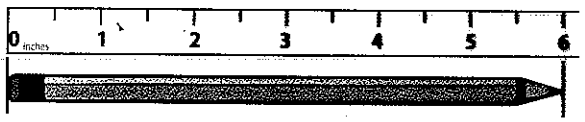
The rope is about _____ inches long.

TRY IT TOGETHER

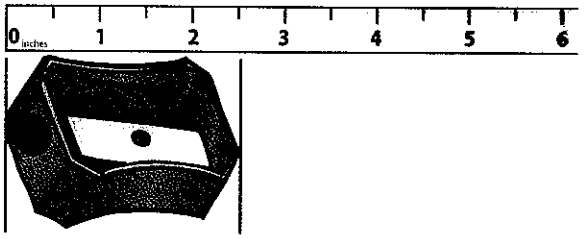
Measure each object to the nearest $\frac{1}{2}$ inch.

4. 

_____ inches

5. 

_____ inches

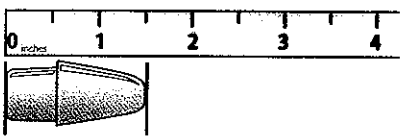
6. 

_____ inches

WORK ON YOUR OWN

Measure to the Nearest $\frac{1}{2}$ Inch

HOW TO

Using Symbols	Using Words
1. 	Line up one end of the object with the 0 mark of the ruler.
2. The end of the cap eraser is between 1 and 2.	Figure out which two numbers the end of the object is closest to.
3. The cap eraser measures $1\frac{1}{2}$ inches.	Count the half to the right of the last complete inch. Write the measurement.

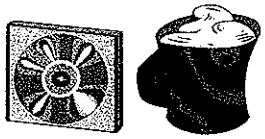
Estimating Length Using Metric Units

Name _____ Class _____ Date _____

GET STARTED

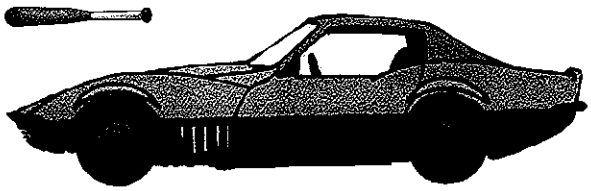
1. 1 meter 1 centimeter
   1 decimeter 1 centimeter
   1 decimeter 1 meter

2. **a.** CD case:
   about _____



   b. cap eraser:
   about _____

3. length of a car:
   about _____



Benchmarks for Estimating Length		
		
about 1 centimeter	about 1 decimeter	about 1 meter

BUILD THE CONCEPT

Is the calculator about 4 centimeters wide or 4 decimeters wide?

4 centimeters (about 4 buttons)

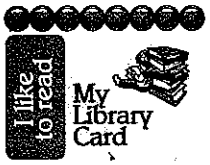
4 decimeters (about 4 mugs)

The calculator is about 4 _____ wide.

TRY IT TOGETHER

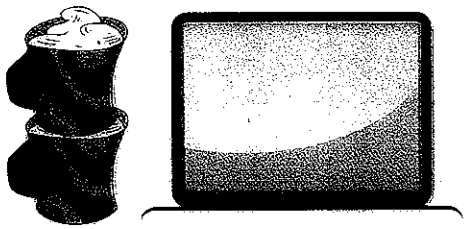
Estimate each length.

4. About how many centimeters is the width of a library card?



_____

5. About how many decimeters tall is a computer screen?



_____

6. About how tall is a flagpole? _____

WORK ON YOUR OWN

HOW TO

Estimate Length Using Benchmarks in Metric Units

Using Symbols

about 6 centimeters

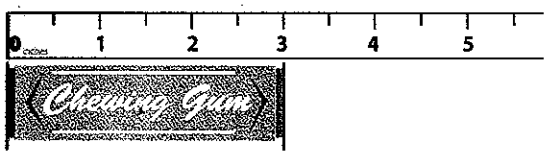
Using Words

Compare the object with another object whose length is known.

Measuring to the Nearest $\frac{1}{2}$ Centimeter

Name _____ Class _____ Date _____

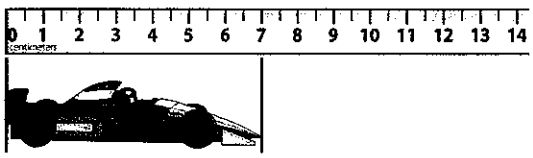
GET STARTED

1. 

_____ inches

2. 

_____ inches

3. 

_____ centimeters

4. 

_____ centimeters

BUILD THE CONCEPT

A ruler can be used to measure length in centimeters.

The ribbon is _____ centimeters long.

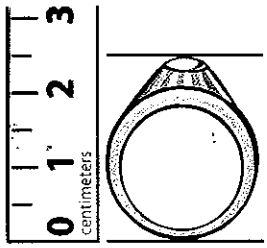
A button can be used to estimate length in centimeters.

The ribbon is about _____ centimeters long.

TRY IT TOGETHER

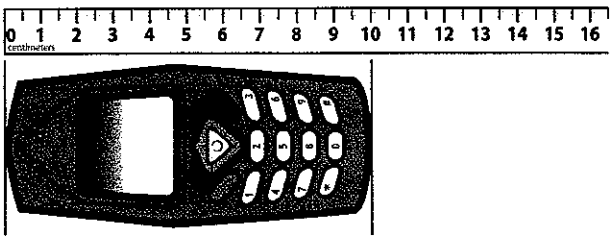
Measure each object to the nearest $\frac{1}{2}$ centimeter.

5



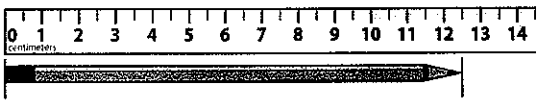
_____ centimeters

6



_____ centimeters

7

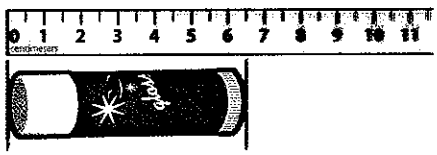


_____ centimeters

WORK ON YOUR OWN

HOW TO

Measure to the Nearest $\frac{1}{2}$ Centimeter

Using Symbols	Using Words
1. 	Line up one end of the object with the 0 mark of the ruler.
2. The end of the lip balm is between 6 and 7.	Figure out which two numbers the end of the object is closest to.
3. The lip balm measures $6\frac{1}{2}$ centimeters.	Count the half to the right of the last complete centimeter. Write the measurement.

New Vocabulary
capacity
cup
pint
quart
gallon

Customary Units of Capacity

Name _____ Class _____ Date _____

GET STARTED

1. **a.** $6 \times 4 =$ _____ **b.** $72 \div 8 =$ _____

2. **a.** small flower vase
cups pints quarts gallons

b. bathtub
cups pints quarts gallons

3.

Gallons	1	2	3	4		6
Quarts	4	8		16	20	24

Customary Units of Capacity		
1 cup = 8 fluid ounces	1 quart = 4 cups	1 gallon = 8 pints
1 pint = 2 cups	1 quart = 2 pints	1 gallon = 4 quarts

4. 6 quarts = _____ cups
larger unit → smaller unit
1 quart = _____ cups
_____ × _____ = _____

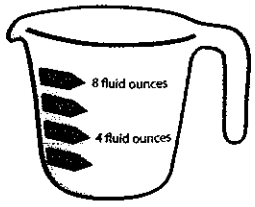
5. 32 pints = _____ gallons
smaller unit → larger unit
_____ pints = 1 gallon
_____ ÷ _____ = _____

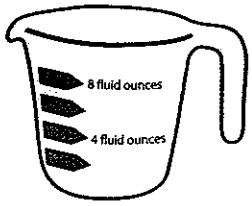
BUILD THE CONCEPT

Use the measuring cups to complete the conversion:

2 cups = ? fluid ounces

1 cup





$2 \times$ _____ = _____

2 cups = _____ fluid ounces

TRY IT TOGETHER

Choose the best unit of measure for each object.

6. gasoline tank

   pints quarts gallons

7. school milk carton

   pints quarts gallons

Complete each conversion.

8. 6 pints = _____ quarts

   smaller unit → larger unit

   _____ pints = 1 quart

   _____ ÷ _____ = _____

9. 5 pints = _____ cups

   larger unit → smaller unit

   1 pint = _____ cups

   _____ × _____ = _____

WORK ON YOUR OWN

HOW TO

Convert from a Larger Unit to a Smaller Unit

Using Symbols	Using Words
1. 3 cups = ? fluid ounces larger unit → smaller unit 1 cup = **8** fluid ounces	Find the number of smaller units in one larger unit.
2. 3 × **8** = 24 So, 3 cups equal 24 fluid ounces.	**Multiply.**

Convert from a Smaller Unit to a Larger Unit

Using Symbols	Using Words
1. 36 cups = ? quarts smaller unit → larger unit **4 cups** = 1 quart	Find the number of smaller units in one larger unit.
2. 36 ÷ 4 = 9 So, 36 cups equal 9 quarts.	Divide.

New Vocabulary
milliliter
liter

Metric Units of Capacity

Name _____ Class _____ Date _____

GET STARTED

1. **a.** baby pool
   pints quarts gallons

   b. can of soda
   fluid ounces quarts gallons

2. **a.** large pitcher of lemonade
   milliliters liters

   b. baby bottle
   milliliters liters

3.

Liters	1	2	3	4	5	6
Milliliters	1,000	2,000	3,000			

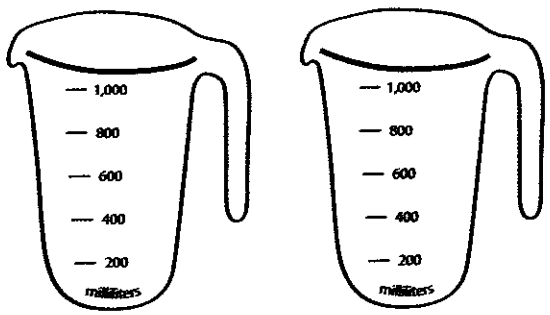
4. 4 liters = _____ milliliters
   larger unit → smaller unit

5. 2,000 milliliters = _____ liters
   smaller unit → larger unit

BUILD THE CONCEPT

Use the measuring cups to convert 2 liters to milliliters.

1 liter



2 × _____ = _____

2 liters = _____ milliliters

TRY IT TOGETHER

Choose the better unit of measure for each object.

5 large bottle of water

milliliters liters

7 eye dropper

milliliters liters

Use the table in problem 3 to complete each conversion.

8 5,000 milliliters = _____ liters

smaller unit → larger unit

9 6 liters = _____ milliliters

larger unit → smaller unit

WORK ON YOUR OWN

HOW TO

Convert Metric Units of Capacity

Using Symbols

1.

Liters	1	2	3	4
Milliliters	1,000	2,000	3,000	4,000

$1 \times 1{,}000 = 1{,}000$ $2 \times 1{,}000 = 2{,}000$

$3 \times 1{,}000 = 3{,}000$ $4 \times 1{,}000 = 4{,}000$

2. **4** liters = **4,000** milliliters

3,000 milliliters = **3** liters

Using Words

Complete the table by multiplying by 1,000 to find the number of milliliters in each number of liters.

Use the table to find a specific metric conversion.

New Vocabulary
weight
ounce
pound

Customary Units of Weight

Name _____ Class _____ Date _____

GET STARTED

1. $\begin{array}{r} 16 \\ \times\ 4 \\ \hline \end{array}$

2. **a.** key
   ounces pounds

   b. baby
   ounces pounds

3.

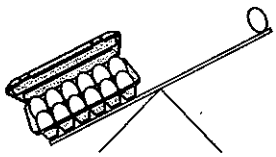
Pounds	1	2	3
Ounces	16	32	

4. 4 pounds = _____ ounces
   larger unit → smaller unit
   1 pound = _____ ounces
   _____ × _____ = _____

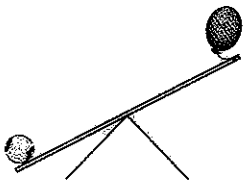
5. 2 pounds 6 ounces = _____ ounces
   larger unit → smaller unit
   1 pound = _____ ounces
   _____ × _____ = _____
   _____ + _____ = _____

BUILD THE CONCEPT

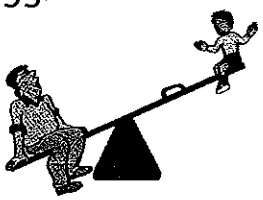
Weight tells how heavy an object is.



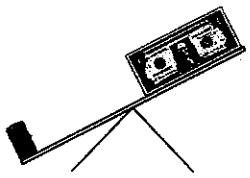
A carton of eggs **weighs** _____ than an egg.



A balloon weighs _____ **than a softball.**



A man weighs _____ than a boy.



A roll of quarters weighs _____ than a dollar bill.

TRY IT TOGETHER

Choose the better unit of measure for each object.

6 egg

ounces pounds

7 bicycle

ounces pounds

Complete each conversion.

8 6 pounds = _____ ounces

larger unit → smaller unit

1 pound = _____ ounces

_____ × _____ = _____

9 5 pounds 2 ounces = _____ ounces

larger unit → smaller unit

1 pound = _____ ounces

_____ × _____ = _____

_____ + _____ = _____

WORK ON YOUR OWN

HOW TO

Convert Pounds to Ounces

Using Symbols

7 pounds = ? ounces
1 pound = 16 ounces
7 × 16 = 112
So, 7 pounds equal 112 ounces.

Using Words

Multiply the number of pounds by 16.

Convert Pounds and Ounces to Ounces

Using Symbols

1. 6 pounds 5 ounces = ? ounces
   1 pound = 16 ounces
   6 × 16 = 96
2. 96 + 5 = 101 ounces
   So, 6 pounds 5 ounces equal 101 ounces.

Using Words

Multiply the number of pounds by 16.

Add the product from step 1 to the number of ounces in the original weight to find the total number of ounces.

Metric Units of Weight

Name _____ Class _____ Date _____

GET STARTED

1 **a.** box of pencils

ounces pounds

b. sofa

ounces pounds

2 **a.** cat

grams kilograms

b. eraser

grams kilograms

3

Kilograms	1	2	3	4	5	6
Grams	1,000	2,000				

4 4 kilograms = _____ grams

larger unit → smaller unit

5 2,000 grams = _____ kilograms

smaller unit → larger unit

BUILD THE CONCEPT

Find and use a pattern to complete the table.

Kilograms	1	2	3	4		
Grams	1,000	2,000	3,000	4,000		

Pattern rule for kilograms: _____

Pattern rule for grams: _____

TRY IT TOGETHER

Choose the better unit of measure for each object.

6. heavy textbook

   grams kilograms

7. penny

   grams kilograms

Use the table in problem 3 to complete each conversion.

8. 6,000 grams = _____ kilograms

   smaller unit → larger unit

9. 3 kilograms = _____ grams

   larger unit → smaller unit

WORK ON YOUR OWN

HOW TO

Convert Metric Units of Weight

Using Symbols

1.

Kilograms	1	2	3	4
Grams	1,000	2,000	3,000	4,000

$1 \times 1{,}000 = 1{,}000$ $2 \times 1{,}000 = 2{,}000$

$3 \times 1{,}000 = 3{,}000$ $4 \times 1{,}000 = 4{,}000$

2. **2 kilograms = 2,000 grams**

   4,000 grams = 4 kilograms

Using Words

Complete the table by multiplying by 1,000 to find the number of grams in each number of kilograms.

Use the table to find a specific metric conversion.

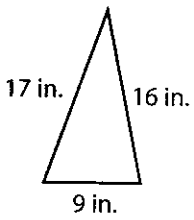
Perimeter

Name _____ Class _____ Date _____

GET STARTED

1. 18
   26
   + 34

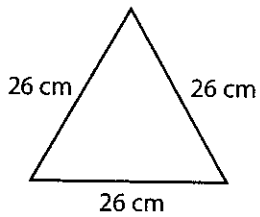
2. 27
   53
   + 14

3. 

Perimeter = 17 + 16 + 9

+ ____

Perimeter = ____ inches

4. 

Perimeter = ____ + ____ + ____

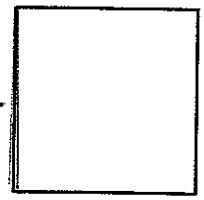
+ ____

Perimeter = ____ centimeters

BUILD THE CONCEPT

Find the perimeter of the square.

5 in.

5 in.  ____

____

P = ____ + ____ + ____ + ____

P = ____ inches

OR

P = ____ × 5

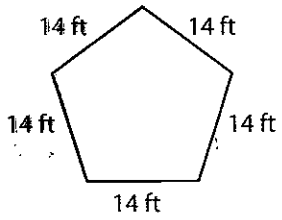
P = ____ inches

The perimeter of a square can be found by multiplying ____ by the length of one of the sides.

TRY IT TOGETHER

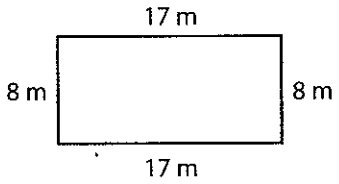
Find the perimeter of each polygon.

5



Perimeter = _____

6



Perimeter = _____

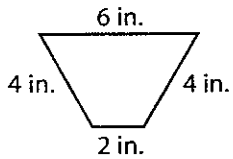
WORK ON YOUR OWN

HOW TO

Find the Perimeter of a Polygon

Using Symbols

1.



$6 + 4 + 2 + 4 = \mathbf{16}$

Using Words

Add the lengths of all the sides.

2. **Perimeter = 16 inches** Record the unit of measure for the perimeter.

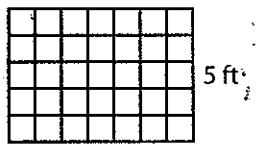
Area

Name _____ Class _____ Date _____

GET STARTED

1. $8 \times 7 =$ _____

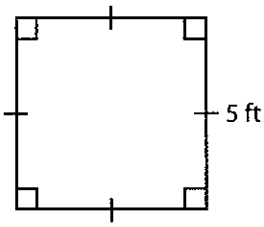
2.
$$\begin{array}{r} 13 \\ \times\ 7 \\ \hline \end{array}$$

3. 

Area: $A = l \times w$

$A =$ _____ $\times$ _____

$A =$ _____ square feet

4. 

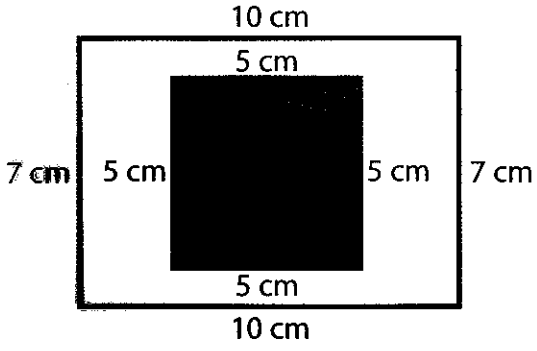
Area: $A = l \times w$

$A =$ _____ $\times$ _____

$A =$ _____ square feet

BUILD THE CONCEPT

Find the difference in areas of the rectangle and the blue square.



Area of Rectangle

$A = l \times w$

$=$ _____ $\times$ _____

$A =$ _____ square centimeters

Area of Square

$A = l \times w$

$=$ _____ $\times$ _____

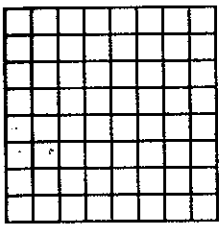
$A =$ _____ square centimeters

The difference in areas is _____ $-$ _____ $=$ _____ square centimeters.

TRY IT TOGETHER

Find the area of each rectangle or square.

5

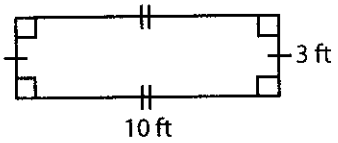


$A = l \times w$

$A =$ _____ $\times$ _____

$A =$ _____ square meters

6



$A = l \times w$

$A =$ _____ $\times$ _____

$A =$ _____

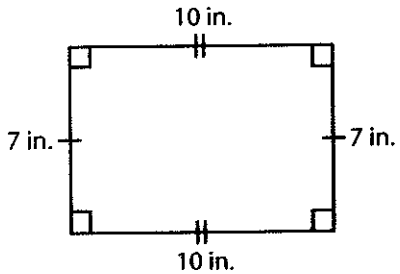
WORK ON YOUR OWN

HOW TO

Find the Area of a Rectangle or Square

Using Symbols

1.



Area = length × width

$A = 10 \times 7 = 70$

2. $A = 70$ square inches

Using Words

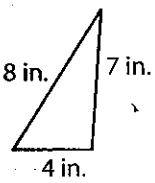
Use the formula Area = length × width.

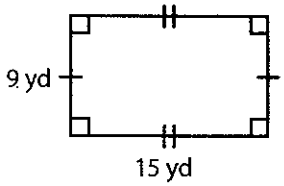
Record the area in square units.

Problem-Solving: Working Backward

Name _____ Class _____ Date _____

GET STARTED

1. 

2. 

Perimeter = _____ Area = _____

3. A large rectangular table will be used for a banquet. Two opposite sides will seat 10 people each, and one other side will seat 12 people. The table has enough room for 44 people to sit around its perimeter. How many people can be seated along the fourth side?

   a. **Find:** _____

   b. **How?** _____

   c. **Solve:** $10 + 12 + 10 + ? = 44$

   $44 - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ = \_\_\_\_$

   _____ people can be seated along the fourth side.

   d. **Is the answer reasonable? Explain.** _____

   _____

TRY IT TOGETHER

Solve the problem.

4. Mr. Grigsby is installing tile flooring in his rectangular bathroom. The floor has an area of 48 square feet. The length of the bathroom is 8 feet. What is the width of the floor?

   a. **Find:** _____

   b. **How?** _____

   c. **Solve:** $8 \times ? = 48$

   _____ ÷ _____ = _____

   The width of the floor is _____ feet.

   d. **Is the answer reasonable? Explain.** _____

   _____

WORK ON YOUR OWN

HOW TO

Solve a Problem by Working Backward

The area of Mrs. Ford's kitchen floor is 36 square feet. Her kitchen is the shape of a rectangle. The length of her kitchen is 9 feet. What is the width?

1. **Find:** the width of Mrs. Ford's kitchen
2. **How?** Work backward.
3. **Solve.** $9 \times ? = 36$

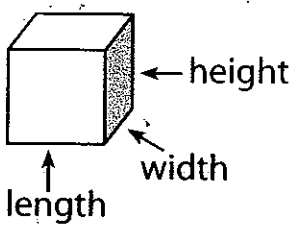
   $36 \div 9 = 4$

4. **Is the answer reasonable? Explain.** Yes, $9 \times 4 = 36$.

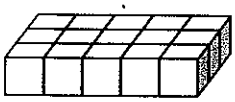
Volume

Name _____ Class _____ Date _____

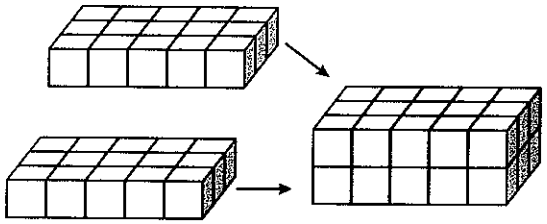
GET STARTED

1. 

_____

2. 

Volume = _____ cubic units

3. 

Volume = _____ cubic units

4. length = _____ units

width = _____ units

height = _____ units

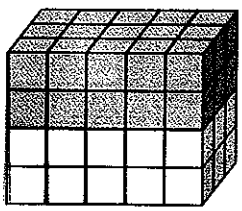
$V = l \times w \times h$

= _____ × _____ × _____

= _____ × _____

V = _____ cubic units

BUILD THE CONCEPT



length = _____ units

width = _____ units

height = _____ units

$V = l \times w \times h$

= _____ × _____ × _____

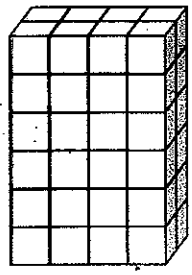
= _____ × _____

V = _____ cubic units

TRY IT TOGETHER

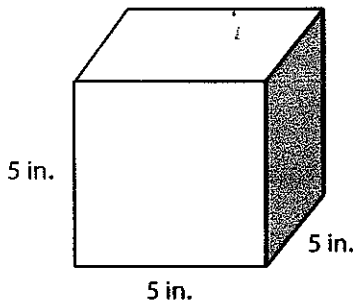
Find the volume of each rectangular prism.

5



length = _____ units
width = _____ units
height = _____ units
$V = l \times w \times h$
= _____ × _____ × _____
= _____ × _____
V = _____ cubic units

6



length = _____ inches
width = _____ inches
height = _____ inches
$V = l \times w \times h$
= _____ × _____ × _____
= _____ × _____
V = _____ cubic inches

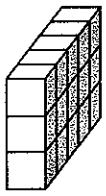
WORK ON YOUR OWN

Find the Volume of a Rectangular Prism

HOW TO

Using Symbols

Using Words

1. 

length = 1 unit
width = 5 units
height = 3 units

Identify the length, width, and height of the prism.

2. $V = 1 \times 5 \times 3$
$= 5 \times 3$
$= 15$

Use the formula Volume = length × width × height.

3. $V = 15$ cubic units

Record the volume in cubic units.