

Strategies for Finding Area

Home Link 1-2

NAME _____

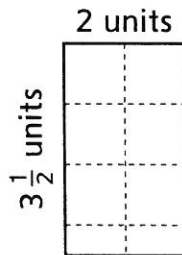
DATE _____

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Here are two strategies you can use to find the area of a rectangle.

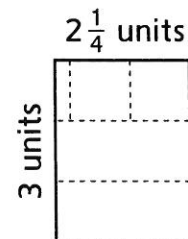
Divide the rectangle into unit squares. Count the squares and partial squares.



6 whole squares plus 2 partial squares that are each $\frac{1}{2}$ square makes 7 squares in all.

Area = 7 square units

Think about using copies of a row or column to fill up the rectangle.

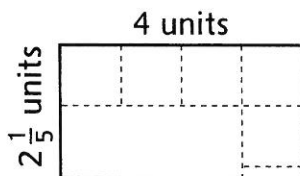


There are $2\frac{1}{4}$ squares in each row and 3 rows. $2\frac{1}{4} + 2\frac{1}{4} + 2\frac{1}{4} = 6\frac{3}{4}$ squares in all.

Area = $6\frac{3}{4}$ square units

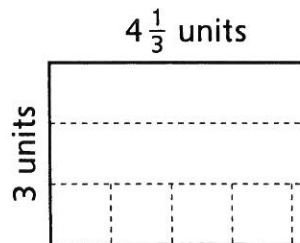
Find the area of each rectangle.

①



Area = _____ square units

②



Area = _____ square units

Practice

Solve.

③ $14 - (9 + 2) = \underline{\hspace{2cm}}$

④ $(14 - 9) + 2 = \underline{\hspace{2cm}}$

⑤ $8 + (6 \div 2) - 1 = \underline{\hspace{2cm}}$

⑥ $(8 + 6) \div 2 - 1 = \underline{\hspace{2cm}}$

Finding the Area of Rectangles

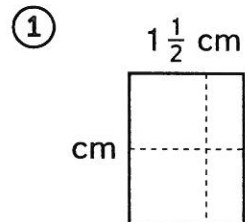
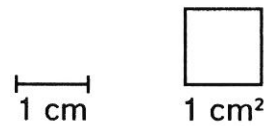
Home Link 1-3

NAME _____

DATE _____

TIME _____

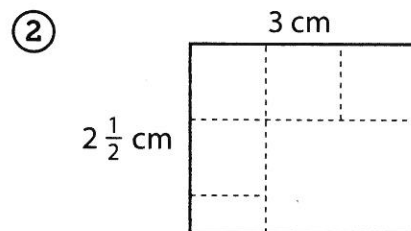
Find the area of the rectangles below. Write a number sentence for each problem and explain how you found the area.



Area = _____

Number sentence: _____

Explanation:



Area: _____

Number sentence: _____

Explanation:

Practice

Solve.

③ 36 inches = _____ feet

④ _____ inches = 5 feet

⑤ 18 inches = _____ feet

⑥ $\frac{1}{2}$ foot = _____ inches

How Many Fields?

Home Link 1-4

NAME _____

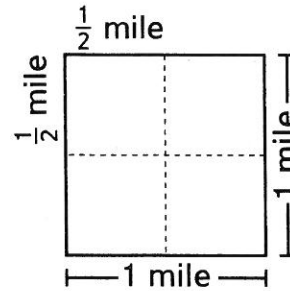
DATE _____

TIME _____

A farmer has one square mile of land.

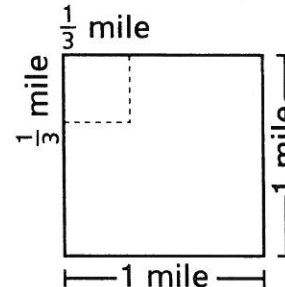
- ① If he divides his land into square fields that are $\frac{1}{2}$ mile long and $\frac{1}{2}$ mile wide, how many fields will he have?

_____ fields



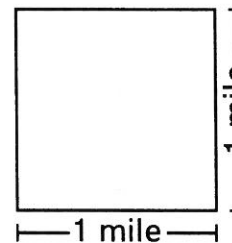
- ② If he divides his land into square fields that are $\frac{1}{3}$ mile long and $\frac{1}{3}$ mile wide, how many fields will he have?

_____ fields



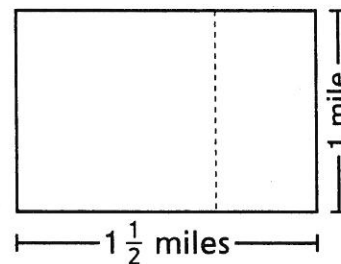
- ③ If he divides his land into square fields that are $\frac{1}{4}$ mile long and $\frac{1}{4}$ mile wide, how many fields will he have?

_____ fields



- ④ a. Suppose the farmer buys another $\frac{1}{2}$ square mile of land and divides all his land into square fields $\frac{1}{4}$ mile long and $\frac{1}{4}$ mile wide. How many fields will he have?

_____ fields



- b. What is the total area of his land in square miles?

_____ square miles

Practice

⑤ a. _____ min = 1 hr

b. 180 min = _____ hr

⑥ a. 1,000 g = _____ kg

b. _____ g = 4 kg

Comparing Volumes of Everyday Objects

Home Link 1-5

NAME _____

DATE _____

TIME _____



Find these (or similar) items in your house:

a cereal bowl

a drinking glass

a coffee mug

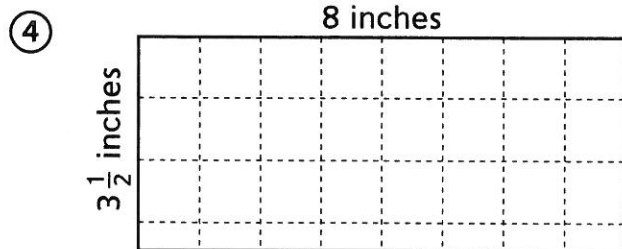
① Which item has the greatest volume? _____

② Which item has the smallest volume? _____

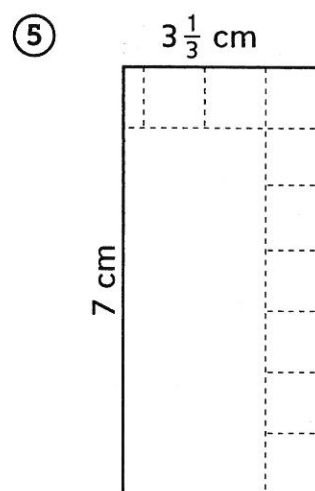
③ Explain your answers to Problems 1 and 2.

Practice

Find the area of each rectangle.



Area = _____ square inches



Area = _____ in.²

Volume Measurement

Home Link 1-6

NAME _____

DATE _____

TIME _____

Volume is the measure of the amount of space a 3-dimensional object takes up. When we talk about the volume of a container (for example, a vase, a can, a glass, a bowl, a bucket, a box), we are talking about the amount the container can hold.



Only 3-dimensional objects take up space and have volume. Two-dimensional shapes have other attributes that we can measure, such as length and area. But 2-dimensional shapes do not have volume.

- ① Circle each item below that has **volume**.

a wiggly line drawn on paper

a blue rectangle

a bar of soap

a bucket

a circle

a swimming pool

a baseball

a drawing of a flower pot

an empty crayon box

a cereal box

a drawing of a tree

the kitchen sink

- ② Choose one of the items you circled. Describe one way you could measure the volume of that item. Be sure to tell what unit you would use and why.

Practice

Solve.

③ $(30 + 40) * 5 = \underline{\hspace{2cm}}$

④ $30 + (40 * 5) = \underline{\hspace{2cm}}$

⑤ $(694 - 95) + (2 + 3) = \underline{\hspace{2cm}}$

⑥ $\underline{\hspace{2cm}} = 15 - (12 + 6 - 3)$

More Cube-Stacking Problems

Home Link 1-7

NAME _____

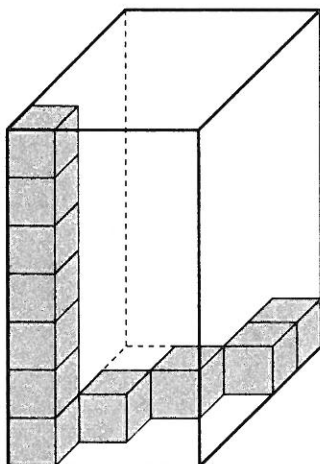
DATE _____

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The cubes in each rectangular prism are the same size. Each prism has at least one stack of cubes that goes up to the top. Find the total number of cubes needed to completely fill each prism. Then find the volume of each prism.

①



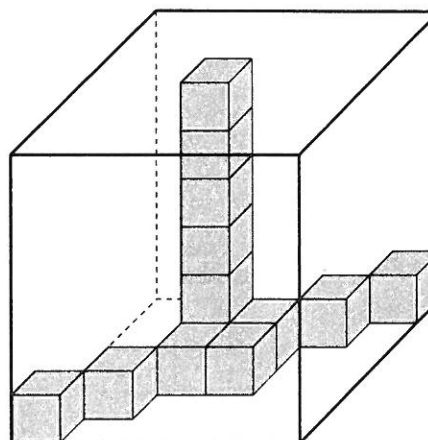
Prism A

Cubes needed to fill Prism A:

_____ cubes

Volume of Prism A: _____ units³

②



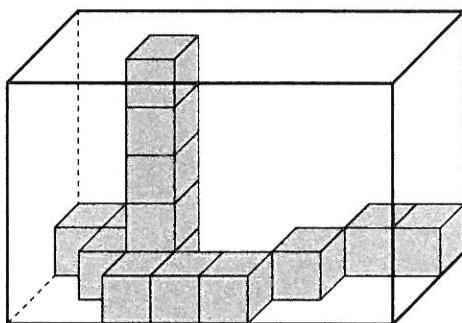
Prism B

Cubes needed to fill Prism B:

_____ cubes

Volume of Prism B: _____ cubic units

③



Prism C

Cubes needed to fill Prism C:

_____ cubes

Volume of Prism C: _____ cubic units

Practice

Solve.

④ $(14 + 30) * 2 =$ _____

⑤ $14 + (30 * 2) =$ _____

⑥ _____ $= (68 - 58) * (8 + 8 + 8)$

⑦ $(15 - 10) + (4 * 5) =$ _____ $+ 5$

Packing Boxes

Home Link 1-8

NAME _____

DATE _____

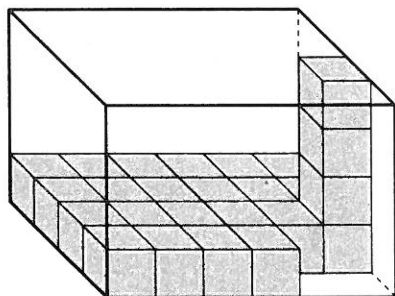
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A fifth-grade class raised money to buy math tools to send to other schools. Tom, Ed, and Anu are in charge of packing unit cubes. They want each student to receive a box with at least 100 unit cubes.

Tom, Ed, and Anu started packing the boxes. They wonder if each box is big enough to hold at least 100 cubes.

Tom's Box

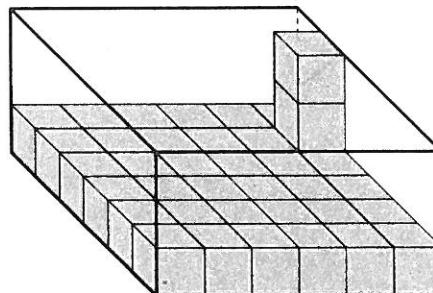


- ① a. How many cubes can Tom's box hold?

_____ cubes

- b. Is Tom's box big enough? _____

Ed's Box

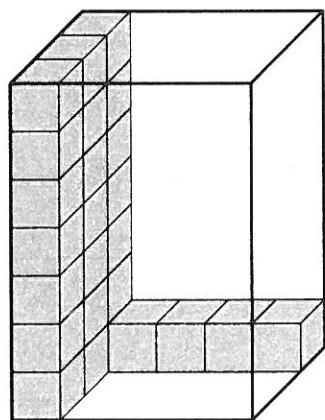


- ② a. How many cubes can Ed's box hold?

_____ cubes

- b. Is Ed's box big enough? _____

Anu's Box



- ③ a. How many cubes can Anu's box hold?

_____ cubes

- b. Is Anu's box big enough? _____

Practice

Insert parentheses to make each equation true.

④ $14 + 2 = 6 + 2 * 3 + 2$

⑤ $16 - 5 * 4 = 22 * 2$

⑥ $16 \times 10 = 100 + 220 \div 2$

⑦ $3 * 56 - 4 = 128 + 28$

Comparing Volumes

Home Link 1-9

NAME _____

DATE _____

TIME _____



Today you learned two different formulas to find the volume of a rectangular prism:

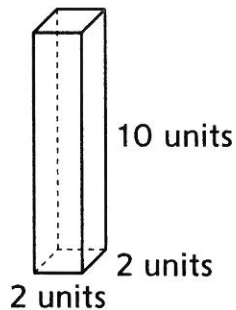
$$V = l \times w \times h \text{ (volume = length} \times \text{width} \times \text{height)}$$

$$V = B \times h \text{ (volume = area of the base} \times \text{height)}$$

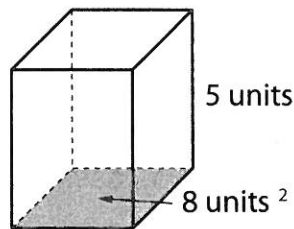
Use the formulas to find the volume of each prism. Be sure to include a unit.

Cross out the prism in each set that has a volume different than the other prisms.

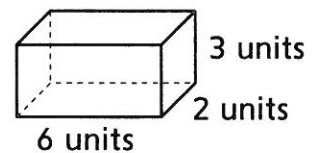
① Set 1



Volume = _____

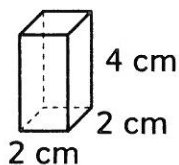


Volume = _____

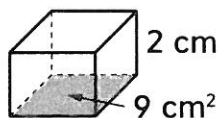


Volume = _____

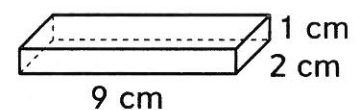
② Set 2



Volume = _____



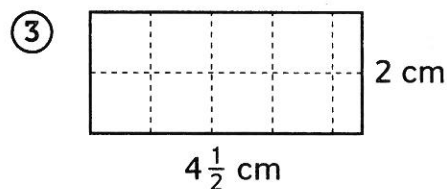
Volume = _____



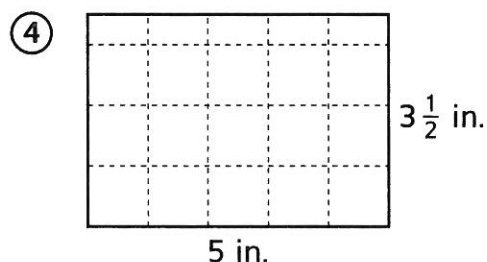
Volume = _____

Practice

Find the area of each rectangle.



Area = _____



Area = _____

Comparing Volume Units

Home Link 1-10

NAME

DATE

TIME



Circle the volume unit that is larger.

- ① cubic centimeters cubic meters
- ② cubic millimeters cubic inches
- ③ cubic miles cubic decimeters
- ④ cubic meters cubic feet
- ⑤ Explain how you knew which volume unit was larger in Problems 1–4.

Find an object around your home that you might measure with the given unit.

- ⑥ cubic inches

- ⑦ cubic meters

- ⑧ cubic feet

Practice

Find the volume of a rectangular prism with the given dimensions.

- ⑨ length = 8 meters
height = 5 meters
width = 2 meters
_____ meters³

- ⑩ area of the base = 25 inches²
height = 4 inches
_____ inches³

Finding Volumes

Home Link 1-11

NAME _____

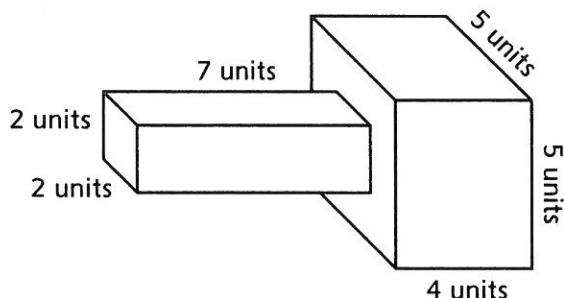
DATE _____

TIME _____

Find the volume of each figure below. Then name at least one real-world object that the figure could model. For example, the figure in Problem 1 could model a flashlight.



①

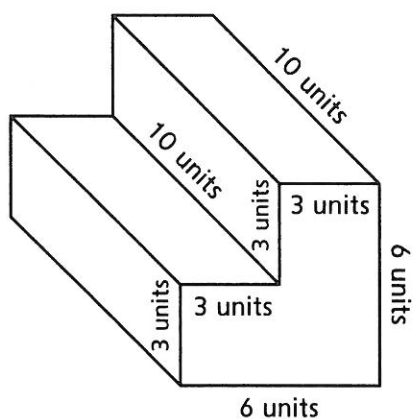


This figure could model ...

a flashlight

Volume = _____ cubic units

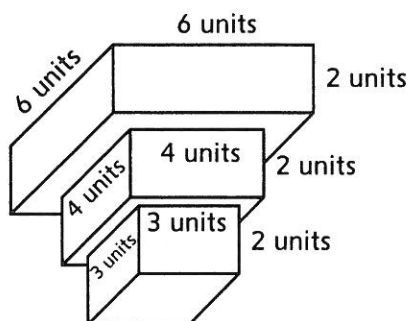
②



This figure could model ...

Volume = _____ cubic units

③



This figure could model ...

Volume = _____ cubic units

Playing Prism Pile-Up

Home Link 1-12

NAME _____

DATE _____

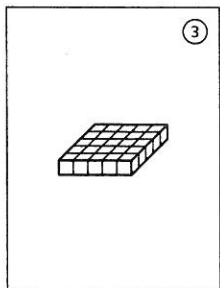
TIME _____



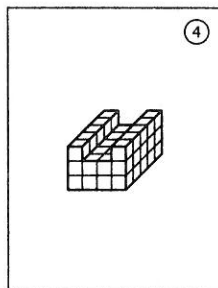
Three rounds of *Prism Pile-Up* are shown below. For each round:

- Find the volume of each figure.
- Circle the winning card (the card with the figure that has a greater volume).
- Write one or more number sentences for the winning card.

Round 1



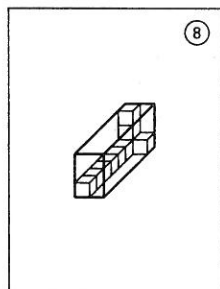
$$V = \underline{\hspace{2cm}} \text{ cm}^3$$



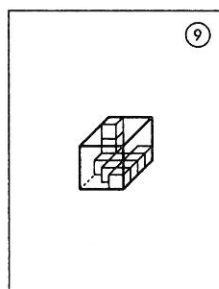
$$V = \underline{\hspace{2cm}} \text{ cm}^3$$

Number sentence(s):

Round 2



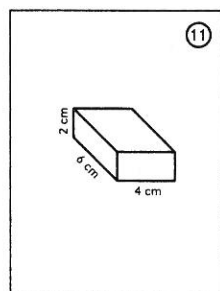
$$V = \underline{\hspace{2cm}} \text{ cm}^3$$



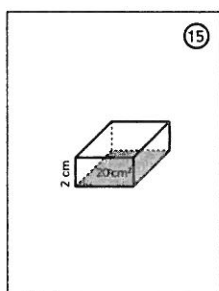
$$V = \underline{\hspace{2cm}} \text{ cm}^3$$

Number sentence(s):

Round 3



$$V = \underline{\hspace{2cm}} \text{ cm}^3$$



$$V = \underline{\hspace{2cm}} \text{ cm}^3$$

Number sentence(s):
