5th Grade

Week 4: April 20-24

Math

Parent/Student Directions - Instrucciones para padres / estudiantes

Math: April 24th - 17th 2020

Monday:

- Today you're going to read and work through **Lesson 9.4: Line Graphs** on pages 551-553.
- Here is a YouTube video that will help you with this lesson!
- https://www.youtube.com/watch?v=1YTTTFY9J9w
- Complete practice pages 555-556.

Lunes:

- Hoy leerá y trabajará en la **Lección 9.4: Gráficos lineales** en las páginas 551-553.
- ¡Aquí hay un video de YouTube que lo ayudará con esta lección!
- https://www.youtube.com/watch?v=1YTTTFY9J9w
- Complete las páginas de práctica 555-556.

Tuesday:

- Today you're going to read and work through **Lesson 9.5: Numerical Patterns** on pages 559-561.
- Here is a YouTube video that will help you with this lesson!
- https://www.youtube.com/watch?v=o70BTEjqArQ
- Complete practice pages 563-564.

Martes:

- Hoy leerá y trabajará en **la Lección 9.5: Patrones numéricos** en las páginas 559-561.
- ¡Aquí hay un video de YouTube que lo ayudará con esta lección!
- https://www.youtube.com/watch?v=o70BTEjqArQ
- Complete las páginas de práctica 563-564.

Wednesday:

- Today you're going to read and work through **Lesson 9.6: Problem Solving: Find a Rule** on pages 565-568.
- Here is a YouTube video that will help you with this lesson!
- https://www.youtube.com/watch?v=4vx_jJGgiDI
- Complete practice pages 569-570.

Miércoles:

- Hoy leerá y trabajará en **la Lección 9.6: Resolución de problemas: encuentre una regla** en las páginas 565-568.
- ¡Aquí hay un video de YouTube que lo ayudará con esta lección!
- https://www.youtube.com/watch?v=4vx_jJGgiDI
- Complete las páginas de práctica 569-570.

Thursday:

- This is a catch-up day. Students can use the day to complete any unfinished assignments and get any questions answered they may have by their teacher. You can ask me questions through Dojo, email, text message, or phone call. Use the rest of your day to “sharpen the saw!”

Jueves:

- Este es un día de recuperación. Los estudiantes pueden usar el día para completar cualquier tarea no terminada y obtener cualquier pregunta que su maestro pueda responder. Puede hacerme preguntas a través de Dojo, correo electrónico, mensaje de texto o llamada telefónica. Use el resto de su día para "afilar la sierra".

Friday:

- Today you are going to learn and test your knowledge of what you have practiced throughout the Galileo dialog! Answer the Galileo questions. You can use any information and resources in your packet to help you. Take your time! You’ve got this!

Viernes:

- ¡Hoy aprenderás y probarás tu conocimiento de lo que has practicado a lo largo del diálogo de Galileo! Responde las preguntas de Galileo. Puede usar cualquier información y recursos en su paquete para ayudarlo. ¡Tome su tiempo! ¡Tienes esto!

Name _____

Line Graphs

Essential Question How can you use a line graph to display and analyze real-world data?

Common Core Geometry—5.G.A.2

MATHEMATICAL PRACTICES MP4, MP6

Unlock the Problem

A **line graph** is a graph that uses line segments to show how data changes over time. The series of numbers placed at fixed distances that label the graph are the graph's **scale**. The **interval**, or difference between one number and the next on the scale, should be equal.

Graph the data. Use the graph to determine the times between which the greatest temperature change occurred.

Recorded Temperatures							
Time (A.M.)	1:00	2:00	3:00	4:00	5:00	6:00	7:00
Temperature (in °F)	51	49	47	44	45	44	46

- Write related number pairs of data as ordered pairs.

(1:00, 51) (_____, _____)

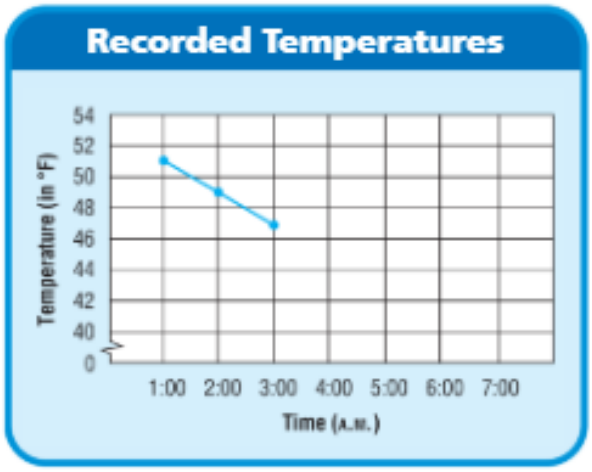
(_____, _____) (_____, _____)

(_____, _____) (_____, _____)

(_____, _____)

STEP 1 For the vertical axis, choose a scale and an interval that are appropriate for the data. You can show a break in the scale between 0 and 40, since there are no temperatures between 0°F and 44°F.

STEP 2 For the horizontal axis, write the times of day. Write a title for the graph and name each axis. Then graph the ordered pairs. Complete the graph by connecting the points with line segments.



Look at each line segment in the graph. Find the line segment that shows the greatest change in temperature between two consecutive points.

The greatest temperature change occurred between _____ and _____.

Try This! Jill used a rain gauge to collect data on the total rainfall during 6 days at her home in Miami. She read the amount of rain collected in the rain gauge each day and did not pour it out. Her data is shown in the table. Make a line graph to display Jill's data.

STEP 1 Write related pairs of data as ordered pairs.

(Mon, 2) (_____, _____) (_____, _____)

(_____, _____) (_____, _____) (_____, _____)

STEP 2 Choose a scale and an interval for the data.

STEP 3 Label the horizontal and vertical axes. Write a title for the graph. Graph the ordered pairs. Connect the points with line segments.

Rainfall Collected

Day	Rainfall (in inches)
Mon	2
Tue	2
Wed	3
Thu	6
Fri	8
Sat	9

Math Talk MATHEMATICAL PRACTICES 4

Model Mathematics How could you use the graph to identify the two readings between which it did not rain?

Use the graph to answer the questions.

1. On which day was the total rainfall recorded the greatest?

_____

2. On which day did Jill record the greatest increase in rainfall collected from the previous day?

_____

Name _____

Share and Show

MATH BOARD

Use the table at the right for 1–8.

1. What scale and interval would be appropriate to make a graph of the data?

_____

_____

2. Write the related pairs as ordered pairs.

_____

_____

3. Make a line graph of the data.

4. Use the graph to determine between which two months the least change in average temperature occurs.

_____

Average Monthly Temperature in Tupelo, Mississippi

Month	Jan	Feb	Mar	Apr	May
Temperature (in °F)	40	44	54	62	70

On Your Own

Use the table at the right for 5–7.

5. Write the related number pairs for the plant height as ordered pairs.

_____

6. What scale and interval would be appropriate to make a graph of the data?

_____

7. Make a line graph of the data.

8. GO DEEPER Use the graph to find between which two months the plant grew the most? the least?

_____

_____

9. THINK SMARTER Use the graph to estimate the height at $1\frac{1}{2}$ months.

_____

Plant Height

Month	1	2	3	4
Height (in inches)	20	25	29	32

Math on the Spot

Name _____

Line Graphs

COMMON CORE STANDARD—5.G.A.2
Graph points on the coordinate plane to solve real-world and mathematical problems.

Use the table for 1–5.

Hourly Temperature							
Time	10 A.M.	11 A.M.	12 noon	1 P.M.	2 P.M.	3 P.M.	4 P.M.
Temperature (°F)	8	11	16	27	31	38	41

1. Write the related number pairs for the hourly temperature as ordered pairs.

(10, 8); _____

_____

2. What scale would be appropriate to graph the data?

_____

3. What interval would be appropriate to graph the data?

_____

4. Make a line graph of the data.

_____

5. Use the graph to find the difference in temperature between 11 A.M. and 1 P.M.

_____

Problem Solving Real World

6. Between which two hours did the least change in temperature occur?

_____

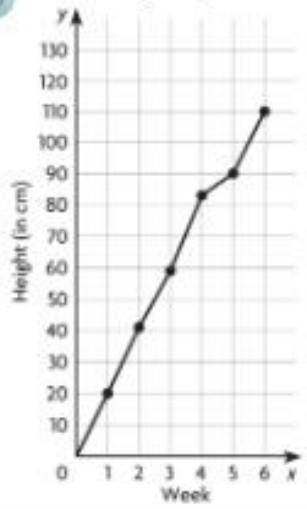
_____

_____

7. What was the change in temperature between 12 noon and 4 P.M.?

_____

Lesson Check (5.G.A.2)



1. About how many centimeters did the plant grow in the first three weeks?

2. Between which two weeks did the plant grow the least?

Spiral Review (5.OA.A.2, 5.NBT.B.6, 5.NF.B.6, 5.NF.B.7c)

3. Write an expression using the Distributive Property to find the product of 7×63.

4. Lexi needs to buy 105 vases for a party. Each package has 6 vases. How many packages should Lexi buy?

5. A student athlete runs $3\frac{1}{3}$ miles in 30 minutes. A professional runner can run $1\frac{1}{4}$ times as far in 30 minutes. How far can the professional runner run in 30 minutes?

6. A recipe for salad dressing calls for $\frac{1}{4}$ cup of vinegar. You have 4 cups of vinegar. How many batches of salad dressing could you make with the vinegar?

FOR MORE PRACTICE GO TO THE Personal Math Trainer

Name _____

Numerical Patterns

Essential Question How can you identify a relationship between two numerical patterns?

Common Core — Operations and Algebraic Thinking—5.OA.B.3

MATHEMATICAL PRACTICES
MP6, MP7, MP8

Unlock the Problem

Real World

On the first week of school, Joel purchases 2 movies and 6 songs from his favorite media website. If he purchases the same number of movies and songs each week, how does the number of songs purchased compare to the number of movies purchased from one week to the next?

- How many movies does Joel purchase each week?

  _____

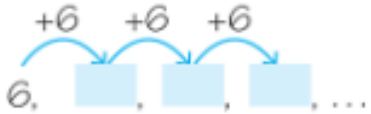
- How many songs does Joel purchase each week?

  _____

STEP 1 Use the two rules given in the problem to generate the first 4 terms in the sequence for the number of movies and the sequence for number of songs.

- The sequence for the number of movies each week is:

- The sequence for the number of songs each week is:



STEP 2 Write number pairs that relate the number of movies to the number of songs.

Week 1: 2, 6 Week 2: _____

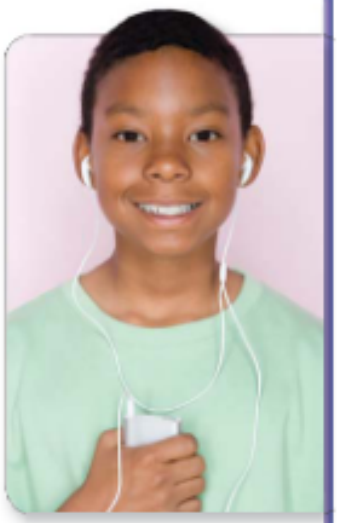
Week 3: _____ Week 4: _____

STEP 3 For each number pair, compare the number of movies to the number of songs. Write a rule to describe this relationship.

Think: For each related number pair, the second number is _____ times as great as the first number.

Rule: _____

So, from one week to the next, the number of songs Joel purchased is _____ times as many as the number of movies purchased.



Example

When Alice completes each level in her favorite video game, she wins 3 extra lives and 6 gold coins. What rule can you write to relate the number of gold coins to the number of extra lives she has won at any level? How many extra lives will Alice have won after she completes 8 levels?

Add _____.

Level	0	1	2	3	4	...	8
Extra Lives	0	3	6	9	12	...	
Gold Coins	0	6	12	18	24	...	48

Add _____.

Multiply by _____ or divide by _____.

STEP 1 To the left of the table, complete the rule for how you could find the number of extra lives won from one level to the next.

From one level to the next, Alice wins _____ more extra lives.

STEP 2 To the left of the table, complete the rule for how you could find the number of gold coins won from one level to the next.

From one level to the next, Alice wins _____ more gold coins.

STEP 3 Write number pairs that relate the number of gold coins to the number of extra lives won at each level.

Level 1: 6, 3 Level 2: _____

Level 3: _____ Level 4: _____

STEP 4 Complete the rule to the right of the table that describes how the number pairs are related. Use your rule to find the number of extra lives at level 8.

Think: For each level, the number of extra lives is _____ as great as the number of gold coins.

Rule: _____

So, after 8 levels, Alice will have won _____ extra lives.

Math Talk MATHEMATICAL PRACTICES 7

Identify Relationships How would your rule change if you were relating extra lives to gold coins instead of gold coins to extra lives?

Name _____

Share and Show

MATH BOARD

Use the given rules to complete each sequence. Then, complete the rule that describes how nickels are related to dimes.

1.

	Number of coins	1 2 3 4 5	2	3	4	5
Add 5.	Nickels (¢)	5	10	15	20	
Add 10.	Dimes (¢)	10	20	30	40	

Multiply by _____.

Complete the rule that describes how one sequence is related to the other. Use the rule to find the unknown term.

2. Multiply the number of books by _____ to find the amount spent.

Day	1	2	3	4	...	8
Number of Books	3	6	9	12	...	24
Amount Spent ($)	12	24	36	48	...	

3. Divide the weight of the bag by _____ to find the number of marbles.

Bags	1	2	3	4	...	12
Number of Marbles	10	20	30	40	...	
Weight of Bag (grams)	30	60	90	120	...	360

On Your Own

Complete the rule that describeshow one sequence is related to the other. Use the rule to find the unknown term.

4. Multiply the number of eggs by _____ to find the number of muffins.

Batches	1	2	3	4	...	9
Number of Eggs	2	4	6	8	...	18
Muffins	12	24	36	48	...	

5. Divide the number of meters by _____ to find the number of laps.

Runners	1	2	3	4
Number of Laps	4	8	12	
Number of Meters	1,600	3,200	4,800	6,400

6. MATHEMATICAL PRACTICE 6 **Make Connections** Suppose the number of eggs used in Exercise 4 is changed to 3 eggs for each batch of 12 muffins, and 48 eggs are used. How many batches and how many muffins will be made?

_____

Name _____

Numerical Patterns

COMMON CORE STANDARD—5.OA.B.3
Analyze patterns and relationships.

Complete the rule that describes how one sequence is related to the other. Use the rule to find the unknown term.

1. Multiply the number of laps by 50 to find the number of yards.

Think: The number of yards is 50 times the number of laps.

Swimmers	1	2	3	4
Number of Laps	4	8	12	16
Number of Yards	200	400	600	800

2. Multiply the number of pounds by _____ to find total cost.

Boxes	1	2	3	4	6
Number of Pounds	3	6	9	12	18
Total Cost ($)	12	24	36	48	

3. Multiply the number of hours by _____ to find the number of miles.

Cars	1	2	3	4
Number of Hours	2	4	6	8
Number of Miles	130	260	390	

4. Multiply the number of hours by _____ to find the amount earned.

Days	1	2	3	4	7
Number of Hours	8	16	24	32	56
Amount Earned ($)	96	192	288	384	

Problem Solving Real World

5. A map's key shows that every of 5 inches on the map represents 200 miles of actual distance. Suppose the distance between two cities on the map is 7 inches. What is the actual distance between the two cities? Write the rule you used to find the actual distance.

_____

_____

_____

_____

6. To make each costume, Rachel uses 6 yards of material and 3 yards of trim. Suppose she uses a total of 48 yards of material to make several costumes. How many yards of trim does she use? Write the rule you used to find the number of yards of trim.

_____

_____

_____

_____

7. WRITE Math Give an example using the subject of time to describe how two number patterns are related. _____

Lesson Check (5.OA.B.3)

Use the table below to answer questions 1 and 2.

Term Number	1	2	3	4	...	6
Sequence 1	4	8	12	16	...	24
Sequence 2	12	24	36	48	...	?

1. What rule could you write that relates Sequence 2 to Sequence 1?

2. What is the unknown number in Sequence 2?

Spiral Review (5.OA.A.1, 5.NBT.A.1, 5.NF.A.2, 5.NF.B.3)

3. What is the value of the following expression?

$$40 - (3 + 2) \times 6$$

4. What is the value of the digit 9 in the number 597,184?

5. What is the best estimate for the sum of $\frac{3}{8}$ and $\frac{1}{12}$?

6. Terry uses 3 cups of pumpkin seeds to decorate the tops of 12 loaves of bread. She puts an equal amount of seeds on each loaf. How many cups of pumpkin seeds does she put on each loaf of bread?

Name _____

Problem Solving • Find a Rule

Essential Question How can you use the strategy *solve a simpler problem* to help you solve a problem with patterns?

Common Core — Operations and Algebraic Thinking—5.OA.B.3

MATHEMATICAL PRACTICES
MP4, MP6, MP7

Unlock the Problem

Real World

On an archaeological dig, Gabriel separates his dig site into sections with areas of 15 square feet each. There are 3 archaeological members digging in every section. What is the area of the dig site if 21 members are digging at one time?

Read the Problem

What do I need to find?

I need to find the

_____

_____

_____

What information do I need to use?

I can use the area of each section, which is

_____, that

there are _____ members in each section, and that there are 21 members digging.

How will I use the information?

I will use the information to search for patterns to solve

a _____ problem.

Solve the Problem

Sections	1	2	3	4	5	6	7
Number of Members (Add 3.)	3	6	9	12	15	18	21
Area (in square feet) (Add 15.)	15	30	45	60	75	90	

Multiply by _____

Multiply by _____

Possible Rules:

- Multiply the number of sections by _____ to find the number of members.
- Multiply the number of members by _____ to find the total area. Complete the table.

So, the area of the dig site if 21 members are digging is _____ square feet.

Math Talk MATHEMATICAL PRACTICES 6

Explain how you can use division to find the number of members if you know the dig site area is 135 square feet.

Try Another Problem

Casey is making a design with triangles and beads for a costume. Inhis design, each pattern unit adds 3 triangles and 18 beads. Casey uses 72 triangles in his design. How many beads does Casey use?

Use the graphic organizer below to solve the problem.

Read the Problem

What do I need to find?	What information do I need to use?	How will I use the information?

Solve the Problem

So, Casey uses _____ beads.

- What rule could you use to find an unknown number of beads if you know the related number of triangles?

_____

_____

Name _____

Share and Show MATH BOARD

1. Max builds rail fences. For one style of fence, each section uses 3 vertical fence posts and 6 horizontal rails. How many rails does he need for a fence that has 27 posts?

1 Section

2 Sections

3 Sections

First, think about what the problem is asking and what you know. As each section of fence is added, how does the number of posts and the number of rails change?

Next, make a table and look for a pattern. Use what you know about 1, 2, and 3 sections. Write a rule for the number of posts and rails needed for 9 sections of fence.

Number of Sections	1	2	3	...	9
Number of Posts	3	6	9	...	27
Number of Rails	6	12	18	...	

Possible rule for posts: _____

Possible rule for rails: _____

Finally, use the rule to solve the problem.

2. THINK SMARTER What if another style of rail fencing has 6 rails between each pair of posts? How many rails are needed for 27 posts?

Number of Sections	1	2	3	...	9
Number of Posts	3	6	9	...	27
Number of Rails	12	24	36	...	

Possible rule: _____

On Your Own

3. **Look for a Pattern** Jane works as a limousine driver. She earns $50 for every 2-hour shift that she works. How much does Jane earn in one week if she works 40 hours per week? Write a rule and complete the table.

Shift	1	2	3	...	20
Hours Worked	2	4	6	...	40
Jane's Pay ($)	50	100	150	...	

Possible rule: _____

4. THINK SMARTER Rosa plays games at a fair. She can buy 8 game tokens for $1. Each game costs 2 tokens. How many games can she play with 120 tokens? Write a rule and complete the table.

Cost ($)	1	2	3	4	...	15
Tokens	8	16	24	32	...	120
Games	4	8	12	16	...	

Possible rule: _____

5. GO DEEPER Janelle is making snacks for her classmates. There are two cups of raisins in one batch. For every 2 cups of raisins, Janelle adds 4 cups of oats. How many cups of oats will she need if she has 10 cups of raisins? Draw a table and write a possible rule.

Possible rule: _____

Personal Math Trainer

6. THINK SMARTER+ Look for a pattern.

Figure 1 — 2 squares

Figure 2 — 6 squares

Figure 3 — 10 squares

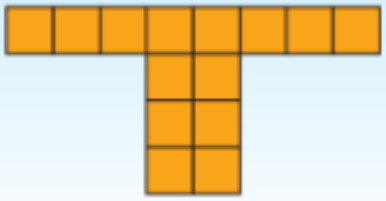


Figure 4

What is a rule? _____

How many squares will there be in Figure 5? _____ squares

Name _____

Problem Solving • Find a Rule

COMMON CORE STANDARD—5.OA.B.3
Analyze patterns and relationships.

Write a rule and complete the table. Then answer the question.

1. Faye buys 15 T-shirts, which are on sale for $3 each. How much money does Faye spend?

Number of T-Shirts	1	2	3	5	10	15
Amount Spent ($)	3	6	9			

Possible rule:
Multiply the number of T-shirts by 3.

The total amount Faye spends is $45.

2. The Gilman family joins a fitness center. They pay $35 per month. By the 12th month, how much money will the Gilman family have spent?

Number of Months	1	2	3	4	5	12
Total Amount of Money Spent ($)	35	70				

Possible rule:
_____
_____

The Gilman family will have spent _____.

3. Hettie is stacking paper cups. Each stack of 15 cups is 6 inches high. What is the total height of 10 stacks of cups?

Number of stacks	1	2	3	10
Height (in.)	6	12	18	

Possible rule:
_____
_____

The total height of 10 stacks is _____.

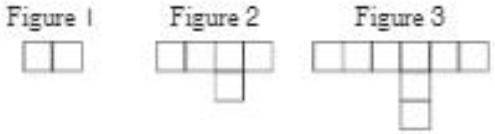
4. WRITE *Math* You have a table that shows a pattern. Describe two ways that you could find the 15th entry in the table.

_____

Lesson Check (5.OA.B.3)

1. How many squares are needed to make the eighth figure in the pattern?

2. What expression could describe the number of squares in the next figure in the pattern, Figure 4?



Spiral Review (5.NBT.A.2, 5.NBT.B.6, 5.NBT.B.7, 5.NF.A.2)

3. Talia stores her collection of stickers equally in 7 sticker albums. If she has 567 stickers, how many stickers are in each album?

4. Ms. Angelino made 2 pans of lasagna and cut each pan into twelfths. Her family ate $1\frac{1}{12}$ pans of lasagna for dinner. How many pans of lasagna were left?

5. What is the next number in this pattern?

0.54, 0.6, 0.66, 0.72, ■, . . .

6. How do you write 100 as a power of 10?

Solve for Volume of Prisms and Cylinders

Slide 1

What You Will Learn

You will learn how to solve problems involving the volume of rectangular prisms and cylinders.

Slide 2

Key Words

volume – measurement of space contained in an object

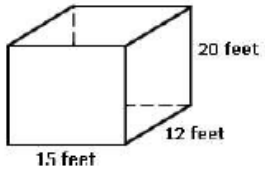
Slide 3

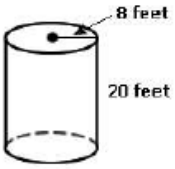
Building a Storage Unit

Lets say you are trying to build a storage unit and there are two designs you could build. You want to build the storage unit that has the largest volume.

One design is a rectangular prism and the other is a cylinder.

How would you find the volume of the two designs?





Slide 4

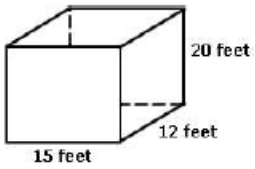
Volume of a Rectangular Prism

To find the volume of a rectangular prism, you must multiply the length (l), width (w), and height (h) of the prism.

$V = l \times w \times h$

From our example, we can find that the volume of the rectangular prism is 3,600 cubic feet.

$V = 15 \times 12 \times 20 = 3{,}600$ cubic feet



Slide 5

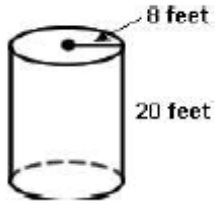
Volume of a Cylinder

To find the volume of a cylinder, you multiply pi (π), the radius squared (r^2), and the height (h) of the cylinder altogether. When we are multiplying, we will use 3.14 for pi (π).

$V = \pi \times r^2 \times h$

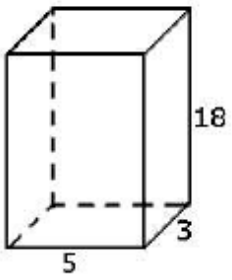
From our example, we can find that the volume of the rectangular prism is about 4,021 cubic feet.

$V = \pi \times (8)^2 \times 20 = 1{,}280\pi \approx 4{,}021$ cubic feet.



Slide 6

What is the volume of the right rectangular prism if the base measures 5 centimeters long and 3 centimeters wide and the height of the prism is 18 centimeters?



A) 33 cubic cm

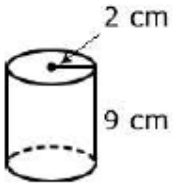
B) 144 cubic cm

C) 270 cubic cm

D) 330 cubic cm

Slide 7

Which is closest to the volume of the cylinder below?



Use $\pi = 3.14$

A) 6.28 cubic cm

B) 12.56 cubic cm

C) 56.52 cubic cm

D) 113.04 cubic cm

Solve for Volume of Prisms and Cylinders

Slide 8

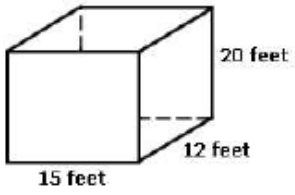
What You Learned

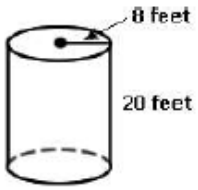
You learned how to solve problems involving the volume of rectangular prisms and cylinders.

Originally, we were looking for which storage unit design had the largest volume. We had to decide between the two designs below.

The volume of the prism is 3,600 cubic feet, while the volume of the cylinder is 4,021 cubic feet.

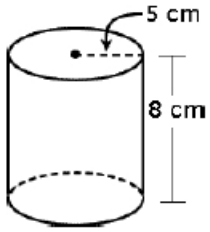
From this problem, we see that the cylinder design will have the largest volume for our storage unit.





Solve for Volume of Prisms and Cylinders Test

1) What is the approximate volume of the cylinder?



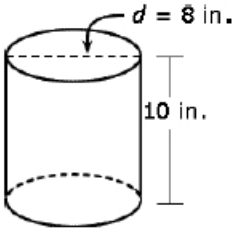
A) 126 cubic cm

B) 251 cubic cm

C) 628 cubic cm

D) 1,005 cubic cm

2) What is the approximate volume of the cylinder?



A) 2,010 cubic inches

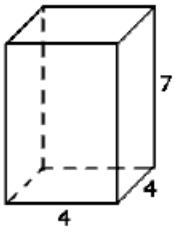
B) 628 cubic inches

C) 502 cubic inches

D) 251 cubic inches

Solve for Volume of Prisms and Cylinders Test

3) What is the volume of the right rectangular prism if the base is a 4-inch by 4-inch square and the height is 7 inches?



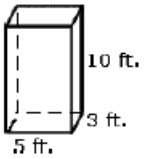
A) 28 cubic in.

B) 112 cubic in.

C) 121 cubic in.

D) 196 cubic in.

4) What is the volume of the box shown below?



A) 15 square feet

B) 15 square inches

C) 150 cubic inches

D) 150 cubic feet