

5th grade

Learning From Home Week 2

○ Reading

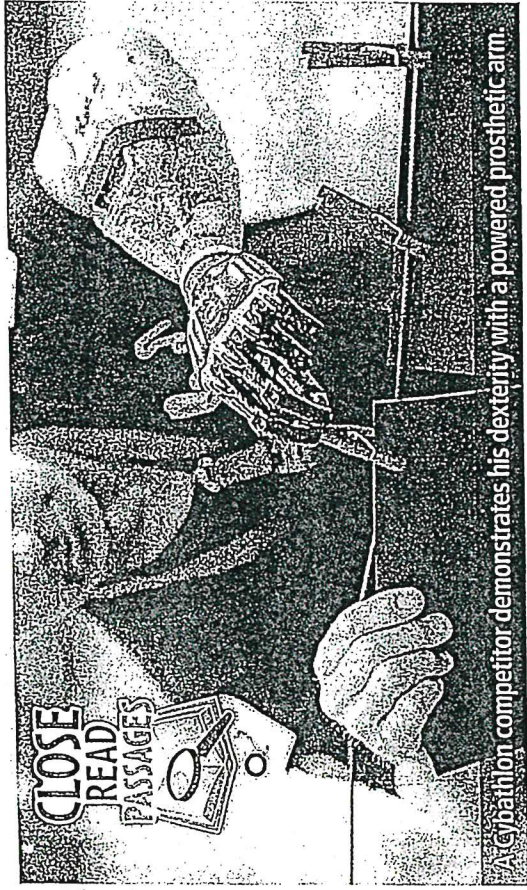
- Read at least 1 book (consider non-fiction)
- 30 minutes each day
- Write a 5 sentence summary for each day in a notebook or googledocs
 - Label with date, book title, minutes read, pages read
- Complete all 3 Close Read Passages
 - Answer questions in a notebook or on googledocs.

○ Writing

- Choose a NEW non-fiction topic to learn about
- Create a project to show what you've learned
 - Book report
 - Power point
 - Informational essay
 - Display
 - Speech
 - Presentation
 - Other creative ideas

○ Math

- Complete Math Lessons 8-3 and 8-4
- Try to complete at least 1 page per day
- Spend 10+ minutes practicing math facts (i.e. Xtramath.com, connected.com, or family games, etc.)



A Cybathlon competitor demonstrates his dexterity with a powered prosthetic arm.

CYBORG ATHLETES

Athletes with disabilities use special equipment to compete in the Paralympic Games. Among other sports, they play wheelchair basketball and ski with prosthetic legs. Now, some athletes are combining their own strengths with those of robotics in a new kind of competition.

In October 2016, Switzerland held the world's first Cybathlon, also known as the Cyborg Olympics. People with disabilities, aided by robotics, competed in various events. Each athlete, called a "pilot," was assisted by engineers or computer experts. One event, called Brain Runners, had players use their brain waves to race in a video game.

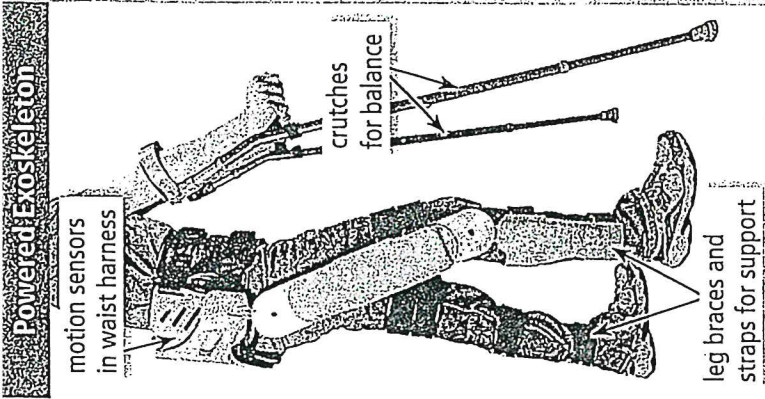
Most events included daily tasks that can be difficult for people with disabilities. For example, pilots without arms competed in one race in which they controlled robotic arms and hands. They raced to clip clothespins and open jars.

Pilots whose legs were paralyzed took part in another race. They strapped into robotic suits called *exoskeletons* and raced to climb stairs and navigate their way through an obstacle course.

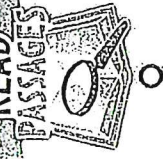
Such equipment may never be welcome in the Paralympic Games. Athletes in those games must depend on their own muscles. Robotic legs might give athletes an unfair advantage in the high jump, for instance.

The Cybathlon was more than a sports event. Scientists used the games to test new ideas and technology. They wanted to show how useful this gear can be in the daily lives of people with disabilities. For example, robotic arms could help wounded soldiers return to work, and exoskeletons could help paralyzed people walk again.

Some people worry that blending human and machine could lead to accidents and abuses. However, this gear is already in use. We may soon see it all around us. Cyborg athletes are giving us a sneak peek of that future.



An exoskeleton uses sensors and microprocessors (similar to a computer) to calculate how a user plans to move, then produces that motion. Users can lean forward to stand or walk and lean backward to stop and sit.



Have students read the passage three times, each with a different purpose. After each read, ask the questions below and discuss the answers in small groups or as a class.

Read 1 What Does the Text Say?

1. What do most events in the Cyborg Olympics include?
2. How are the Cyborg Olympics helpful for scientists?

Read 2 How Does the Text Say What It Says?

3. What words in the first paragraph of the passage help readers understand the meaning of the word *robotics*?
4. What information can readers learn from the "Powered Exoskeleton" sidebar?
5. How does the information in paragraph 3 relate to the photograph of the Cybathlon competitor?

Read 3 What Is the Meaning and Value of the Text?

6. Why are robotic arms and legs prohibited in the Paralympic Games?
7. How is an exoskeleton different from the human body? What is a task that an exoskeleton could help someone perform?
8. The passage states, *Some people worry that blending human and machine could lead to accidents and abuses*. What accidents and abuses might the author be referring to?



Extension Activity

Should the use of robotic limbs be restricted? Explain.
Write a persuasive essay arguing your stance.

Optional Question Bank

Read 1

1. What are athletes in the Cyborg Olympics called?
2. Which events in the Paralympic Games are mentioned in the passage?
3. When and where were the Cyborg Olympics first held?

Read 2

4. How does the prefix *exo-* help readers understand the word *exoskeleton*?
5. What does it mean if part of your body is paralyzed?

Read 3

6. What is the difference between the Paralympic Games and the Cyborg Olympics?
7. Why do engineers or computer experts assist the cyborg athletes?



This Close Read Passage has a text connection listed under "Additional Resources" on this passage's webpage.

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Flying Mountain Parker

It was a sunny day in July, and I was a

new paraglider pilot heading to Washington to fly at Parker Mountain. Flying in the middle of a summer day can be dangerous because of turbulence and strong thermals. For that reason, I had only flown mornings or evenings up until then. That day, though, I planned to fly at 2:00 p.m.

The launch went well. I brought up my wing smoothly, spun around, and ran west off the side of the mountain. I felt my wing lift me up and the magical feeling of free flight. When I passed the shoulder of the mountain, though, I was suddenly blasted by strong winds from the north. The right side of the fabric wing of my glider collapsed and folded under itself. I began to fall out of the sky. I leaned my body to the still-open left side of the wing, as I had been trained. After a few awful seconds, the right side refilled with air and popped back into place.

Word Wise

A **thermal** is a rising column of warm air. Soaring birds and glider aircraft use thermals to fly higher in the sky.



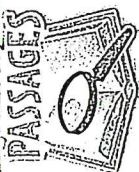
I felt myself being rocked and rolled in all directions. I was like a kayaker passing through whitewater rapids, only the river of air I was flying in was invisible. I wrestled with my wing with all my strength, trying to keep it centered in the sky above my head. I passed through a crazy-strong thermal that rocketed me straight up into the sky.

I love flying with all my heart, but I wasn't loving this. Panicking wasn't going to help me, though. My only hope was to stay calm and do what needed to be done.

I steered out of the thermal and immediately began sinking toward the ground. I fought to keep my wing above me in the gusty air. I wanted to land as soon as I could, but a thick forest of pine trees covered the ground below me. I knew there was a farmer's field beyond the ridge ahead of me, if I could just get over it.

I cleared the trees atop the ridge and made it to the edge of the farmer's field. I circled down as quickly as I could before landing roughly but safely next to a small creek. I had never been so happy to be back on the ground. My hands shook, and it took several minutes for my mind and body to calm down.

Pilots have a saying: "It's better to be on the ground wishing you were in the air than to be in the air wishing you were on the ground." They are right.



Have students read the passage three times, each with a different purpose. After each read, ask the questions below and discuss the answers in small groups or as a class.



What Does the Text Say?

1. What is this passage mainly about?
2. Why had the paraglider pilot avoided flying in the middle of a summer day during previous flights?



How Does the Text Say What It Says?

3. Who is narrating the text? How does his narration add to the passage?
4. What is the tone of the passage? How does the narrator create this tone?
5. What problem does the narrator face? How is the problem solved?
6. How does the final quote in the passage apply to the narrator's experience?



What Is the Meaning and Value of the Text?

7. How do the narrator's thoughts, feelings, and actions change throughout the passage? Why?
8. What might the paraglider pilot do differently next time he flies?



Extension Activity

What did the narrator learn from this experience?

Write a letter from the narrator to a new paraglider pilot explaining a few things he learned from this paragliding experience.

Optional Question Bank



1. Where do the events in the passage take place?
2. How does the narrator's experience compare to kayaking?
3. How does the narrator feel when he finally lands?

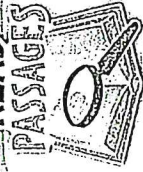


4. What words does the narrator use to describe his experience flying at Parker Mountain?
5. What is a thermal? Why is this important in the context of the passage?



6. How did training help the narrator?
7. Do you think the risks of paragliding outweigh the rewards? Why or why not?
8. Have you had a nerve-wracking experience? How did you handle the experience, and what did you learn from it?





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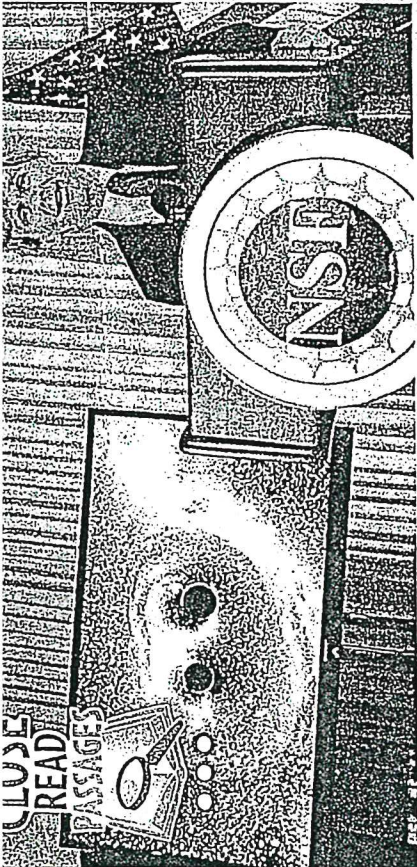


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Physicist David Reitze announces the very first detection of gravitational waves in Washington, D.C.

Einstein Right Again

Billions of miles from Earth, a pair of black holes slowly spiraled toward each other, and finally, they collided. This collision sent waves of energy hurtling through space, like ripples from a rock dropped in a calm pool.

On Earth, scientists waited, believing the collision would release energy in the form of gravitational waves. Albert Einstein had predicted the existence of these waves in 1916, but scientists had never detected them. Then on September 14, 2015, special scientific instruments sensed them as they passed through Earth. Einstein was right once again.

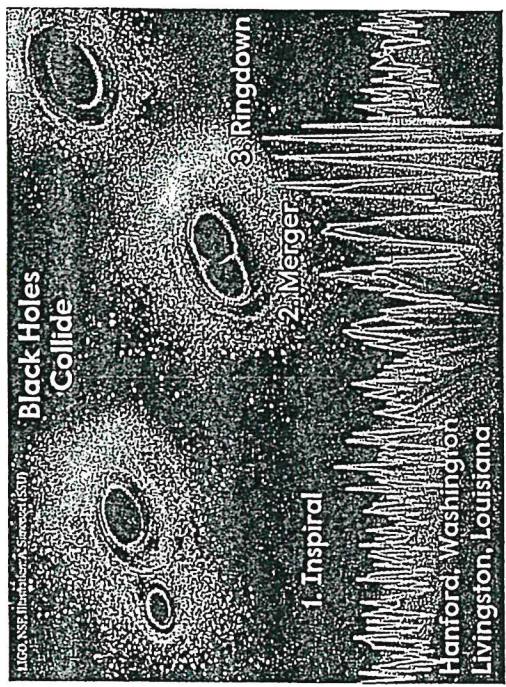
From Theory to Reality

Albert Einstein was a famous physicist who studied objects and energy, and how they move. Many of Einstein's scientific ideas were not the kind that could be tested in a laboratory.

his ideas. He created theories about how energy and mass interact across space and time.

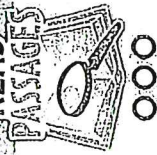
In 1916, Einstein explained his very complex ideas in his general theory of relativity. He predicted the power of nuclear energy and the existence of black holes in space—and gravitational waves, too. His theories led to the making of lasers and computer chips. His ideas about time and space made it possible for one cell phone to call another halfway around the world.

The detection of gravitational waves excites scientists because it will help them study cosmic wonders in new ways. Why might this be important? "Who knows?" says physicist David Reitze. "When Einstein predicted general relativity, who would have predicted that we'd use it every day when we use our cell phones?"



Do You Know?
Many movies and shows like *Star Trek* rely on Einstein's theories to explain science fiction ideas, such as faster-than-light warp speeds in space travel.

The three life stages of two colliding black holes are inspiral, merger, and ringdown. As the black holes spiraled toward each other, collided, and became one, gravitational wave emissions were measured at two different facilities.



Have students read the passage three times, each with a different purpose. After each read, ask the questions below and discuss the answers in small groups or as a class.



What Does the Text Say?

1. Who was Albert Einstein?
2. How is Einstein's 1916 prediction connected to the 2015 discovery of modern scientists?
3. What are some of the creations made possible by Einstein's general theory of relativity?



How Does the Text Say What It Says?

4. What is Einstein's general theory of relativity?
5. How does the "Do You Know?" box inform readers?



What Is the Meaning and Value of the Text?

6. How might the discovery of gravitational waves be comparable to Einstein's theory of relativity?
7. The passage states that Einstein was right "once again." What other theories was Einstein right about?



Extension Activity

How have Einstein's theories affected the world as we know it?
Create a poster that both illustrates and explains this connection.

Optional Question Bank



1. Since many of Einstein's ideas could not be tested in laboratories, how did he show his ideas?
2. Why are scientists excited about the detection of gravitational waves?



3. Albert Einstein was a famous physicist. What is a physicist?
4. According to the passage, how are the gravitational waves produced?
5. Why did the author include the image "Black Holes Collide"?



6. Why did the author write this passage?
7. What are the implications of the detection of gravitational waves? Why might this discovery be important to the scientists?



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Buying a Fish Tank

Lesson 8-3

DATE

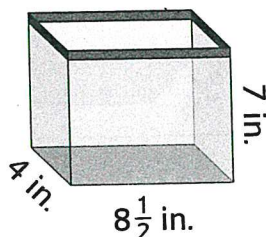
TIME

Math Message

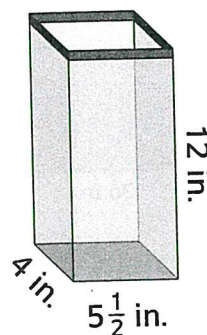
SRB
225, 233

- 1 Glenn is buying a fish tank for his goldfish, Swimmy. Glenn learned that a 1-inch goldfish needs at least 230 cubic inches of water to be healthy. Swimmy is 1 inch long.

Find the volume in cubic inches of each fish tank shown below.



Fish Tank 1



Fish Tank 2

Number model: $V =$ _____

Volume = _____
(unit)

Number model: $V =$ _____

Volume = _____
(unit)

- 2 Which fish tank should Glenn buy for Swimmy? _____

Explain your choice to a partner.

- 3 Glenn also learned that the area of the base of a fish tank should be at least 30 square inches for each inch of fish length.

a. What is the area of the base of Fish Tank 1? _____
(unit)

b. What is the area of the base of Fish Tank 2? _____
(unit)

c. Which fish tank should Glenn buy for Swimmy? Explain.

Planning Your Aquarium

Lesson 8-3

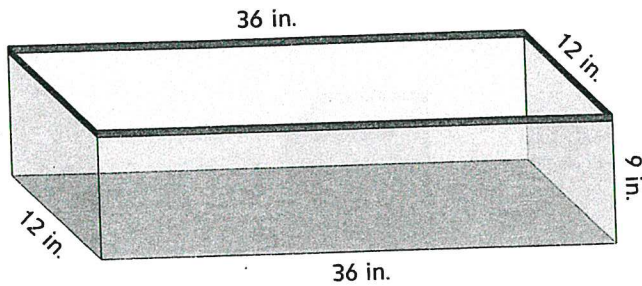
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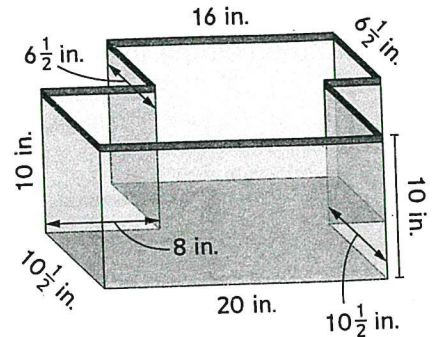
SRB
225, 227
233-234

Imagine you are setting up an aquarium in your room. The pet store has four fish tanks available.

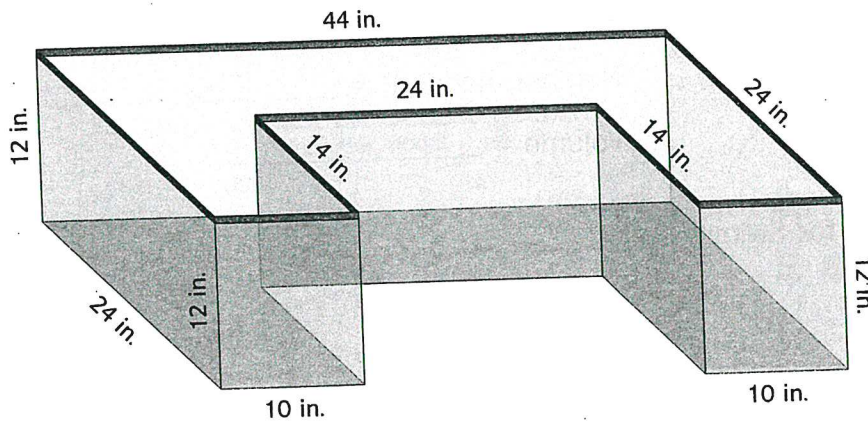
Tank A: **Underwater Adventure**



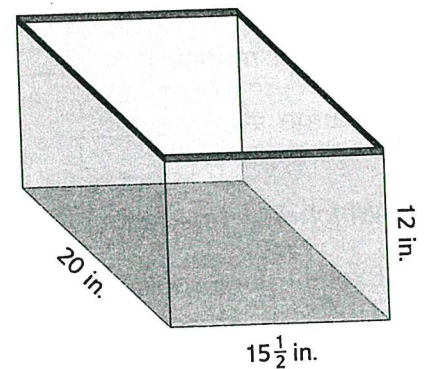
Tank B: **Fish Hotel**



Tank C: **Fish Palace**



Tank D: **Water World**



1 Choose the fish tank that you want for your aquarium. _____ (name of fish tank)

2 What is the area of the base of your fish tank?

_____ (number model)

$A =$ _____ (unit)

3 What is the volume of your fish tank?

_____ (number model)

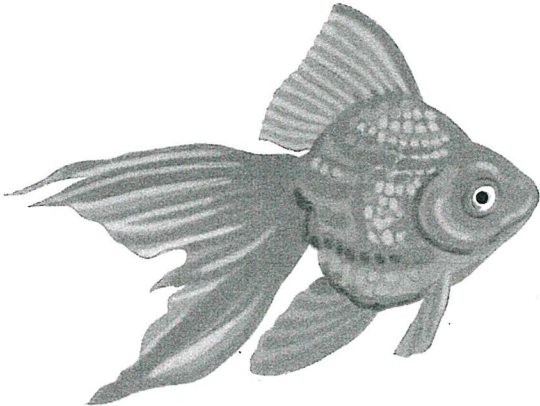
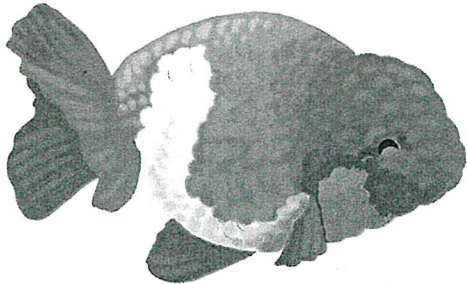
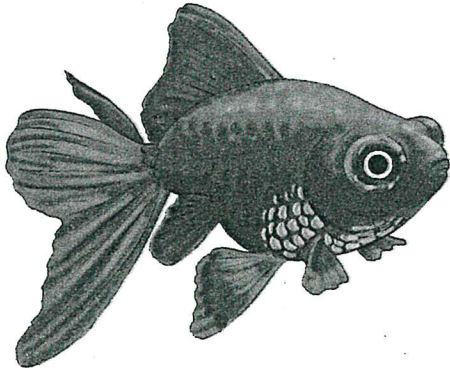
$V =$ _____ (unit)

Goldfish Order Form

Lesson 8-3

DATE

TIME

Goldfish Order Form			
Goldfish	Size	How Many?	Total Inches
Fantail goldfish 	1-inch fantail		
	2-inch fantail		
	$2\frac{1}{2}$ -inch fantail		
Lionhead goldfish 	2-inch lionhead		
	3-inch lionhead		
	4-inch lionhead		
Black dragon eye goldfish 	$1\frac{1}{2}$ -inch black dragon eye		
	2-inch black dragon eye		
	$3\frac{1}{2}$ -inch black dragon eye		
Combined length of all the fish: _____ in.			

Reminder: Go back and complete the problems on the previous page.

Planning Your Aquarium (continued)

Lesson 8-3

DATE

TIME



Keep in mind the following fish tank guidelines. For each inch of fish length:

- The tank must hold at least 230 cubic inches of water.
- The base of the tank should have an area of at least 30 square inches.

4 a. About _____ total inches of fish could live in my tank.

b. Explain your thinking. _____

5 a. Complete the Goldfish Order Form on the next page.

b. Explain how you know that the fish you chose will be healthy living in your fish tank.

Try This

6 Suppose you poured 10 gallons, or about 2,300 cubic inches, of water into your fish tank. About how high would the water level be in your tank? Use a calculator and round your answer to the nearest tenth of an inch. Show your work. *Hint:* Use the formula $V = B \times h$.

The water level in my fish tank would be about _____ inches.

- 1 Choose the best answer.

When you multiply a number by a fraction greater than one, _____

- ☐ the product is equal to the number.
- ☐ the product is greater than the number.
- ☐ the product is less than the number.
- ☐ we don't have enough information to know about the size of the product.

SRB
197

- 2 Jacory made \$223.20 for 12 hours of work. How much did he make in 1 hour?

_____ (number model)

Answer: _____

SRB
44, 137

- 3 Caetano is cutting out rectangles for an art project. Each rectangle has side lengths that are $\frac{7}{8}$ of the previous rectangle's side lengths. The last rectangle that Caetano cut out was $\frac{3}{4}$ in. by $\frac{2}{3}$ in. What will the side lengths of the next rectangle be?

_____ by _____

SRB
178,
201-203

- 4 A bakery sells pie slices that are $\frac{1}{6}$ of a pie. If they made 18 pies today, how many slices of pie will they have?

_____ (division number model)

Answer: _____

SRB
209-210

- 5 **Writing/Reasoning** Explain how you solved Problem 2.

SRB
137

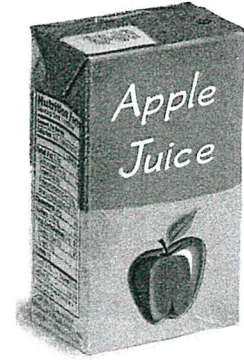
Juice Box

Lesson 8-4

DATE _____

TIME

Clark has a juice box that is not completely filled with juice. The hole at the top of the box is open. Clark grabs the juice box and squeezes it, but the juice does not come out of the box.



- 1 What do you think happened to the shape of the juice box when Clark squeezed it?
- 2 What happened to the amount of juice in the box and the height of the juice when Clark squeezed it?



- 1 Rosa solved the problem below.

$$85.19 \times 1.8 = 1,533.42$$

Is Rosa's answer correct? _____

Write an estimate to show how you know:

If the digits from Rosa's answer are correct, what is the product of 85.19×1.8 ?

SRB
128, 134

- 2 Mr. Havlis split $\frac{1}{3}$ gallon of paint equally among 10 students for a mural they were working on. How much paint did each student get?

_____ (number model)

SRB
207-208

- 3 Brigitte is working on a quilt with squares of fabric measuring $\frac{7}{12}$ ft on each side. What is the area of each square?

_____ (number model)

- 4 Fill in each blank with an exponent to make a true number sentence.

a. $4.3 \times 10^{\boxed{}} = 43,000$

b. $8.7 \div 10^{\boxed{}} = 0.087$

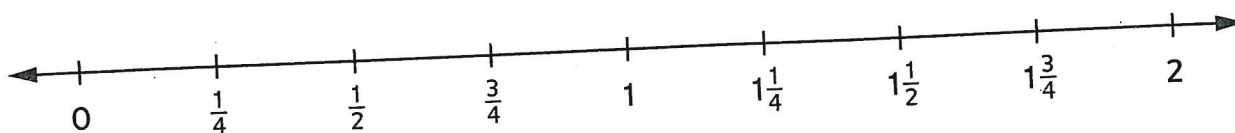
SRB
202-203
225

SRB
133, 136

Answer: _____

- 5 Phoebe has been tracking her height since she was 7 years old. Twice a year she records her growth from her previous measurement. Her measurements are given in inches below.

$\frac{3}{4}$ $1\frac{1}{8}$ $\frac{7}{8}$ $\frac{1}{4}$ $1\frac{1}{2}$ $\frac{3}{8}$ 1 $1\frac{1}{2}$ $\frac{1}{8}$



Phoebe's Growth (in.)

- a. Plot the data on the line plot.
- b. If Phoebe was $49\frac{5}{8}$ inches tall at age 7, how tall was she at her last measurement?

SRB
177, 191
244, 247