Pirate Math Equation Quest

Multi-Step Word-Problem Intervention

With Total, Difference, Change, and Equal Groups Schemas

Student Materials

A

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STUDENT MATERIALS

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Welcome to Pirate Math Equation Quest!

We designed this version of *Pirate Math Equation Quest* as an individual intervention for use with students at the fourth-grade instructional level. This version of the program was developed to offer support to Tier-2 and Tier-3 students who require supplemental mathematics support with single- and multi-step word-problem solving. The focus of the *Pirate Math Equation Quest* multi-step word-problem intervention is single-digit and double-digit additive and multiplicative (single- and multi-step) word problems that include four schemas: Total, Difference, Change, and Equal Groups.

This manual includes the Student Lesson Packets and accompanying Supplemental Materials (i.e., posters, maps, cards, graphs, and mats) necessary to implement *Pirate Math Equation Quest* with individual students. A separate Teacher Manual includes the Teacher Lesson Guides needed to implement *Pirate Math Equation Quest*.

Scientific evaluations of *Pirate Math Equation Quest* indicated that at-risk elementary-age students (with and without mathematics disabilities) who performed in the lowest 25th percentile of their classes demonstrated improved word-problem performance with *Pirate Math Equation Quest* compared to students who did not participate in *Pirate Math Equation Quest* (Powell et. al, 2021).

Our iterations of *Pirate Math Equation Quest* rely upon the core components of *Pirate Math*, which was developed by Dr. Lynn Fuchs and colleagues at Vanderbilt University.



This Student Manual includes the following:

Introduction

- Information about implementing Pirate Math Equation Quest
- Explanation of Student Materials
- Explanation of Supplemental Materials
- Explanation of Other Materials

Student Lesson Packets 1-39

Student Lesson Packets include all of the materials the students will need for each lesson. Each Lesson Packet includes 4 pages (1) Equation Quest worksheet (beginning in Lesson 3; page 1),
(2) Buccaneer Problem worksheet (pages 2-3), and (3) Jolly Roger Review worksheet (page 4).



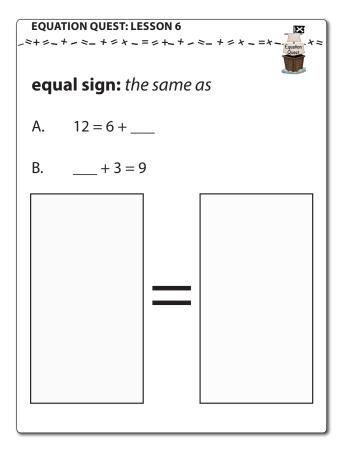
The Student Materials needed for each lesson are organized in a packet by lesson. For example, the Student Lesson Packet for Lesson 6 is labeled Lesson 6 Student Lesson Packet.

Student Lesson Packets include the following 4 pages:

- (1) Equation Quest (beginning in Lesson 3; page 1)
- (2) Buccaneer Problems (pages 2-3)
- (3) Jolly Roger Review (page 4)

All Student Lesson Packets include 4 pages, so the packets can be printed for students in a set prior to the lesson. Teachers should print the Student Lesson Packets double-sided with a staple in the top left-hand corner.

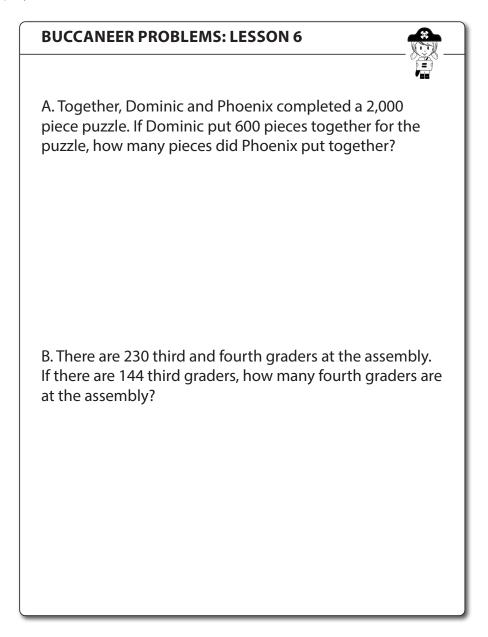
Pictured below is the Equation Quest worksheet, page 1, in the Lesson 6 Student Lesson Packet.



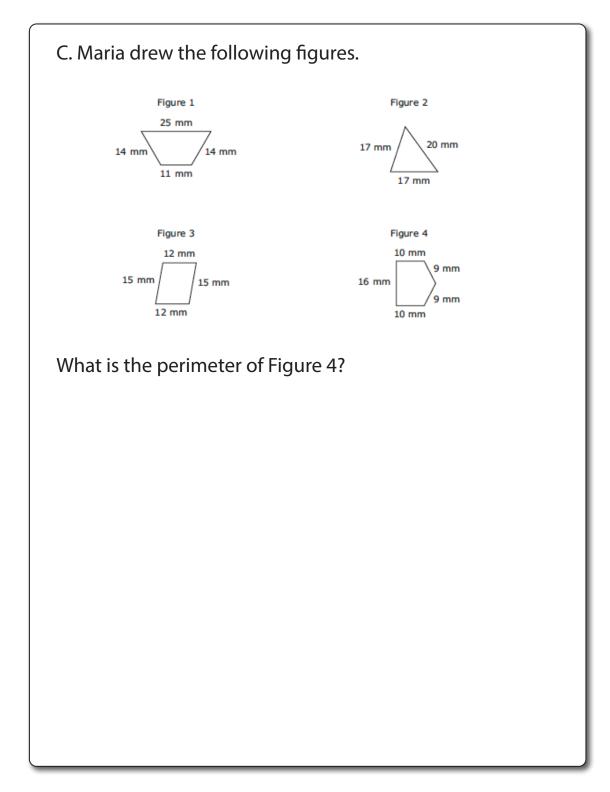
Note that page 1 of the Student Lesson Packets for Lesson 1 and Lesson 2 is intentionally left blank because Equation Quest is introduced during Lesson 3. The Student Lesson Packets for all 39 lessons are included in this manual.

After Equation Quest, students complete three Buccaneer Problems. Buccaneer Problems serve as a guided-practice opportunity for students to solve word problems. Teachers provide support and feedback as needed.

Page 2, the front side of the Buccaneer Problems worksheet in the Lesson 6 Student Lesson Packet, is displayed below.



Page 3, the back side of the Buccaneer Problems worksheet in the Lesson 6 Student Lesson Packet, is displayed below. Buccaneer Problems include three word problems: Problems A, B, and C.



The final worksheet in the Student Lesson Packet is the Jolly Roger Review. The Jolly Roger Review is an independent practice activity that provides students the opportunity to demonstrate their understanding of learned concepts. Below is the Jolly Roger Review worksheet, page 4, in the Lesson 6 Student Lesson Packet.

	\cdots	JOLLY ROGER REVIEW: LESSON 6
A. <u>+</u>	489 <u>619</u>	D. 60 <u>-49</u>
B	304 <u>212</u>	E. 88 <u>+93</u>
C.	64 - 19	F. 27 <u>+92</u>
h	\cdots	JOLLY ROGER REVIEW: LESSON 6
last week. How man	. On Frida	JOLLY ROGER REVIEW: LESSON 6 e cartons of milk the grocery store sold y and Saturday, 997 cartons were sold. were sold on Saturday?
last week. How man	On Friday y cartons ilk Number of	e cartons of milk the grocery store sold y and Saturday, 997 cartons were sold.
last week. How man M	. On Friday y cartons	e cartons of milk the grocery store sold y and Saturday, 997 cartons were sold.
last week. How man	On Friday y cartons ilk Number of Cartons Sold	e cartons of milk the grocery store sold y and Saturday, 997 cartons were sold.
Iast week. How man M Day Monday Tuesday Wednesday	Number of Cartons Sold 352 426 449	e cartons of milk the grocery store sold y and Saturday, 997 cartons were sold.
last week. How man M Day Monday Tuesday	ILK Number of Cartons Sold 352 426	e cartons of milk the grocery store sold y and Saturday, 997 cartons were sold.

Teachers score the top of the Jolly Roger Review worksheet as the number of addition, subtraction, multiplication, and/or division problems answered correctly. Teachers score the bottom of the Jolly Roger Review worksheet out of 2 points. Students earn one point for the correct number answer; students earn one point for the correct label answer. As needed, teachers provide feedback and a brief review to students.



Pirate Math Equation Quest includes several posters for teachers to display throughout the lessons. Templates for the posters are included in this manual. In the beginning lessons, teachers should display the Pirate Math Rules and Counting Up Addition and Subtraction posters pictured on this page and the following page.



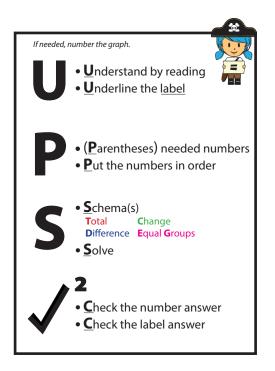
COUNTING UP Addition

- 1. Put the <u>greater</u> number in your fist and say it.
- 2. Count up the number that's <u>less</u> on your fingers.
- 3. The <u>sum</u> is the last number you say.

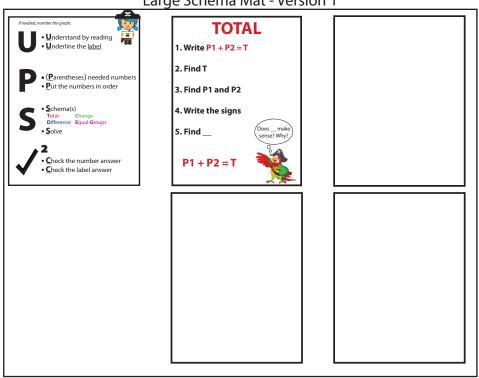
COUNTING UP Subtraction

- 1. Put the <u>minus</u> number in your fist and say it.
- 2. Count up your fingers to the number you <u>start</u> with.
- 3. The <u>difference</u> is the number of fingers you have up.

As teachers introduce the four schemas, Total, Difference, Change, and Equal Groups, they need to display the UPS Check² poster, pictured below, and the corresponding schema posters for students to reference. The UPS Check² poster provides an attack strategy for students to use as they solve word problems.

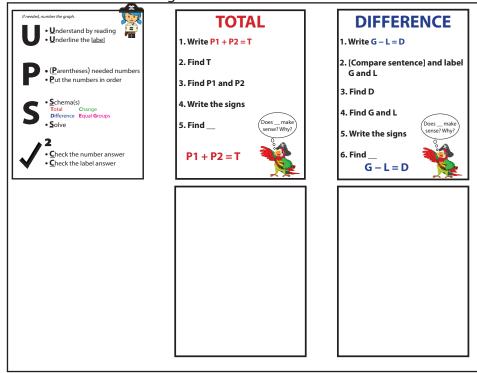


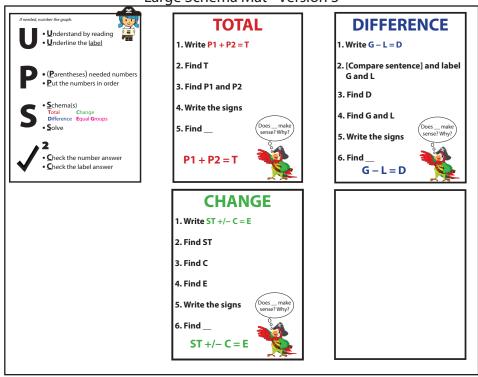
The Large Schema Mats - Versions 1-4, pictured below and on the following page, provide specific steps for setting up and solving a single-step word problem after identifying the correct schema. Total problems are introduced during Lesson 3, Difference problems are introduced during Lesson 8, Change problems are introduced during Lesson 14, and Equal Groups problems are introduced during Lesson 21. As students are exposed to new schemas, the version of the Large Schema Mat advances to reflect all of the schemas the students have learned.



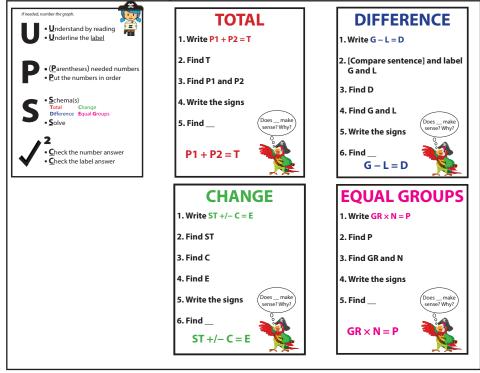
Large Schema Mat - Version 1

Large Schema Mat - Version 2



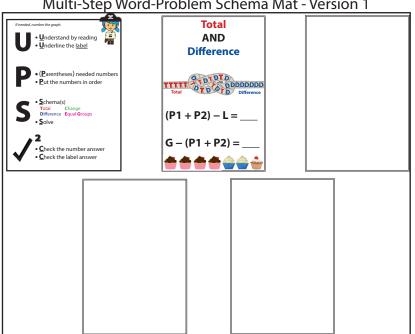


Large Schema Mat - Version 4



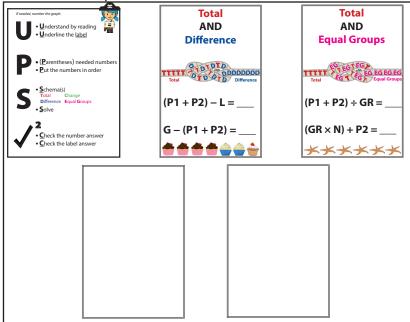
Large Schema Mat - Version 3

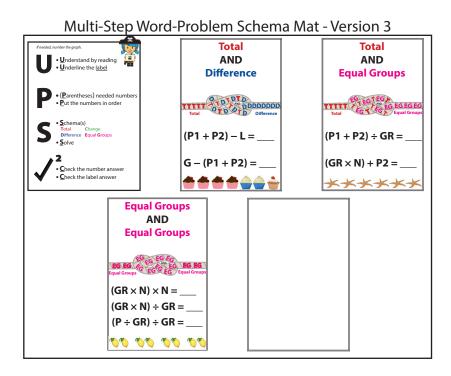
In addition to the Large Schema Mats - Versions 1-4 (which are used for the single-step word problems), the curriculum includes Multi-Step Word-Problem Schema Mats - Versions 1-4, pictured below and on the following page, that provide specific steps for setting up and solving a multi-step word problem after identifying the correct schemas. Total and Difference multistep word problems are introduced during Lesson 11, Total and Equal Groups multi-step word problems are introduced during Lesson 27, Equal Groups and Equal Groups multi-step word problems are introduced during Lesson 30, and Equal Groups and Total/Difference multi-step word problems are introduced during Lesson 35. As students are exposed to new multi-step schema combinations, the version of the Multi-Step Word-Problem Schema Mat advances to reflect all of the multi-step schema combinations the students have learned.

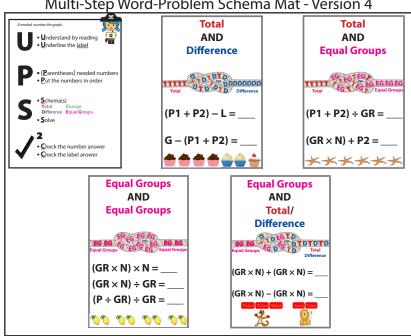


Multi-Step Word-Problem Schema Mat - Version 1

Multi-Step Word-Problem Schema Mat - Version 2

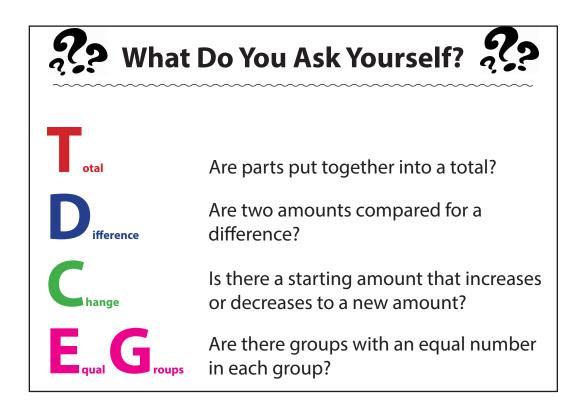






Multi-Step Word-Problem Schema Mat - Version 4

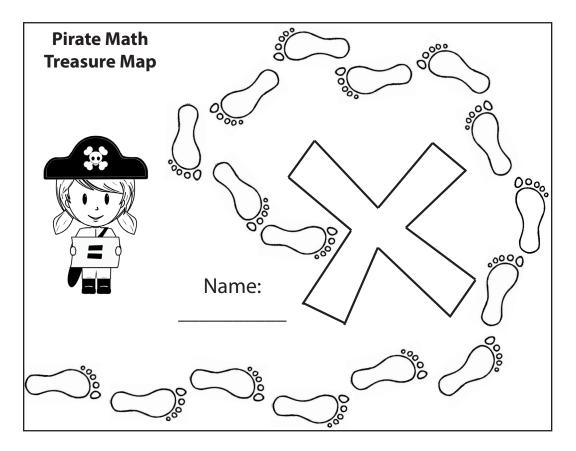
After teachers have introduced the Total and Difference multi-step schema, and later the Change schema, they should display the What Do You Ask Yourself? poster, featured below. The What Do You Ask Yourself? poster, introduced during Lessons 11-13 for multi-step Total and Difference problems and revisited again during Lessons 15-39, provides a prompt for students to ask questions and gesture to determine the correct schema. We encourage teachers to use gestures to help students recall the four schemas. The Total gesture is introduced during Lesson 3. The Difference gesture is introduced during Lesson 8. The Change gesture is introduced during Lesson 14. The Equal Groups gesture is introduced during Lesson 21. Teachers can refer to the Lesson Guides to learn the specific schema gestures to model for students. Students often struggle to identify the correct problem type after all four schemas have been introduced. This poster helps students to distinguish between the Total, Difference, Change, and Equal Groups schemas.

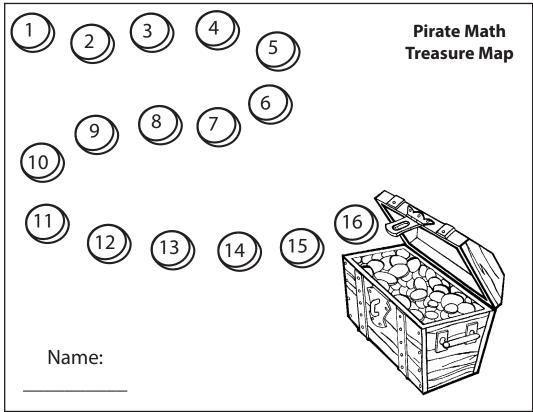


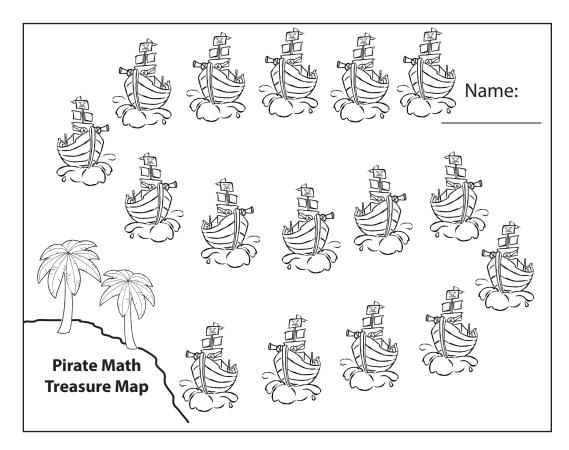
During every lesson, teachers also display the Treasure Map. Throughout each lesson, students can earn coins for their Treasure Map for following the Pirate Math rules. When students reach the end of their Treasure Map, they earn a novelty prize from a treasure box.

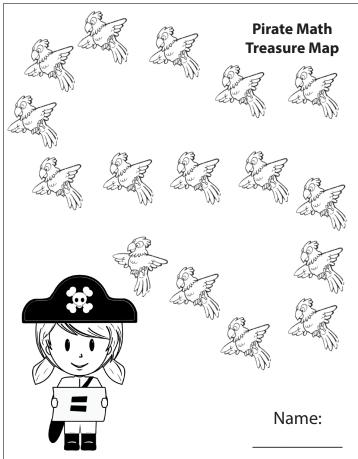
If teachers do not have coins, they can use stamps, stickers, or colored pencils to color the designated number of spaces on the Treasure Map. Similarly, teachers can use any prize bag or box if they do not have a treasure box.

On the following pages are four different variations of the Treasure Map. Teachers can choose one map or alternate maps depending on students' preferences. All four Treasure Map templates are included in this manual.



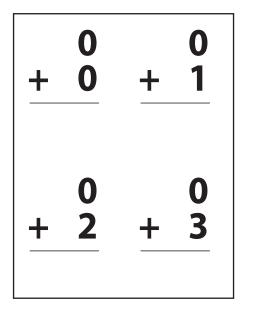


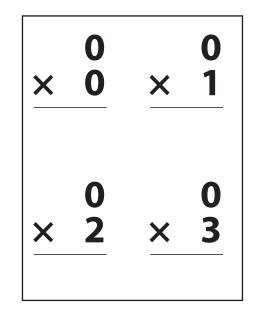




For the Captain Cards activity, teachers need to cut and print the Captain Cards and Captain Cards graph. Templates for the Captain Cards and the Captain Cards graph are included in this manual.

There are two sets of Captain Cards for the multi-step word-problem intervention. The first set includes an addition or subtraction problem on the front side of the card and the correct sum or difference on the back side of the card (Lessons 1-20). The second set includes a multiplication or division problem on the front side of the card and the correct product or quotient on the back side of the card (Lessons 21-39). It is recommended that teachers print these cards double-sided on cardstock. There are four problems per page; teachers should cut each page into fourths using a paper cutter.

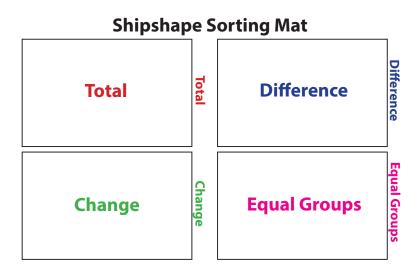




Teachers also need to print the Captain Cards graph, pictured below, in advance of the lesson. At the end of the Captain Cards activity, students graph their higher score from the two trials on the graph below. Teachers should plan to copy extra graphs for easy access after students complete the first graph.

Captain Card Graph Name:													
40		<u> </u>		<u> </u>		<u> </u>		_		<u> </u>	<u> </u>		40
39													39
38													38
37													37
36													36
35													35
34													34
33													33
32													32
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13													13
12													12
11													11
10													10
9													9
8													8
7													7
6													6
5													5
4													4
3													3
2													2
1													1
Day	1												

During Shipshape Sorting, which begins during Lesson 3, students participate in schema sorting practice using sorting cards and the sorting mat, displayed below. Templates for the Shipshape Sorting Mat and accompanying cards are included in this manual.



The Shipshape Sorting cards include a word problem on the front side of the card and the correct schema (i.e., T for Total, D for Difference, C for Change, and EG for Equal Groups) on the back side of the card. It is recommended that teachers print the Shipshape Sorting cards double-sided on cardstock. There are four word problems per page; teachers should cut each page into fourths using a paper cutter. The same word-problem stories are presented across all four schemas to support students in distinguising among Total, Difference, Change, and Equal Groups problems.

Kate has 42 candies. Ana has 28	Miguel has 6 American flags and
candies. How many candies do	6 Mexican flags. How many flags
the girls have?	does Miguel have altogether?
Jahiem sold lemonade for 2 days. On the first day Jahiem made \$30 and on the second day he made \$25. How much money did Jahiem make selling lemonade?	Alina spent 15 minutes practicing the piano. She spent another 7 minutes practicing the flute. How many minutes did Alina spend practicing an instrument?



Other Materials

The following materials are used throughout the program but are not included in this manual.

- Timer
- Cubes
- Gold coins
- Treasure box
- Dry erase board
- Dry erase markers
- Dry erasers
- Blue painter's tape

The timer is used during the timed activities: Captain Cards, Shipshape Sorting, and Jolly Roger Review.

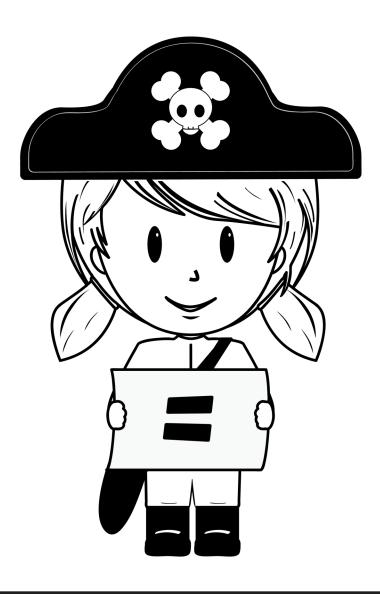
Different colored unit cubes are used during Equation Quest to help students develop their prealgebraic reasoning skills. The timer and cubes can be purchased from a teacher supply store or a mathematics manipulatives company.

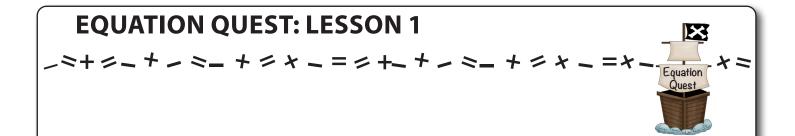
The gold coins and treasure box are used throughout each lesson to reward students for following the Pirate Math rules. As previously mentioned, stamps, stickers, or colored pencils can substitute for gold coins. Teachers can use any prize bag or box if they do not have a treasure box.

The dry erase board, dry erase markers, dry erasers, and blue painter's tape are used during lessons that include Equal Groups problems (i.e., Lessons 21-39) to help students understand the concept of Equal Groups. Students use these materials to illustrate groups with an equal number in each group. Teachers can purchase these materials from a teacher or office supply store.

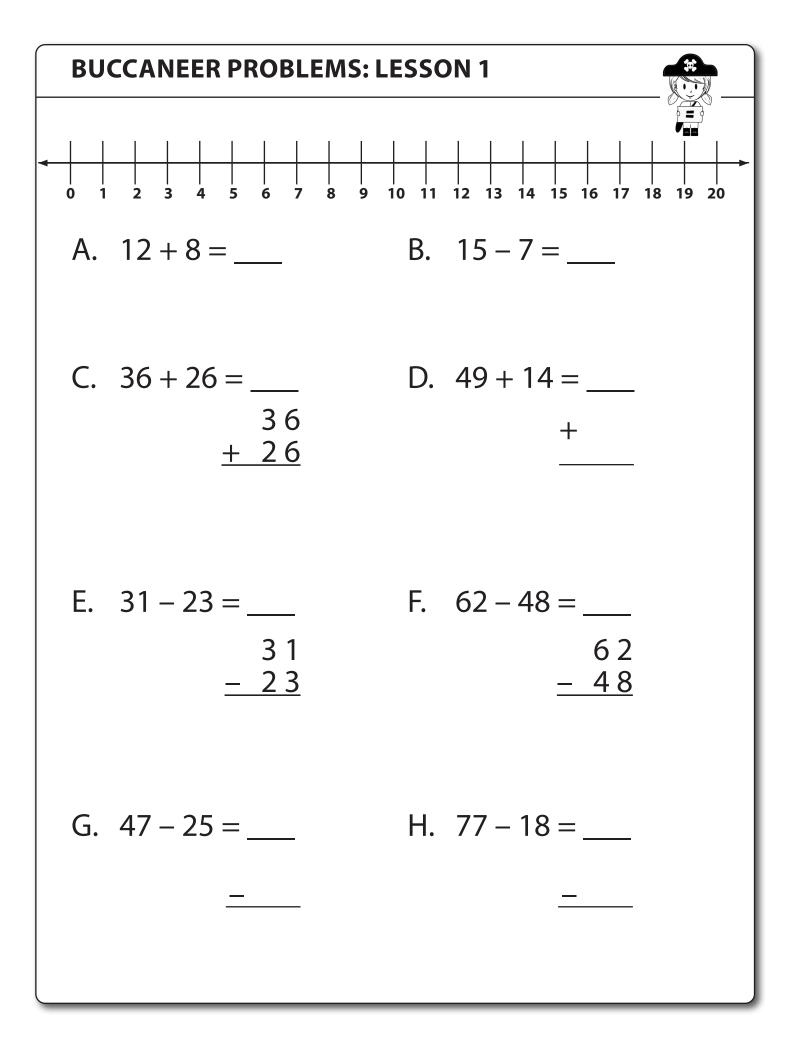
For all lessons, teachers and students also need pencils.

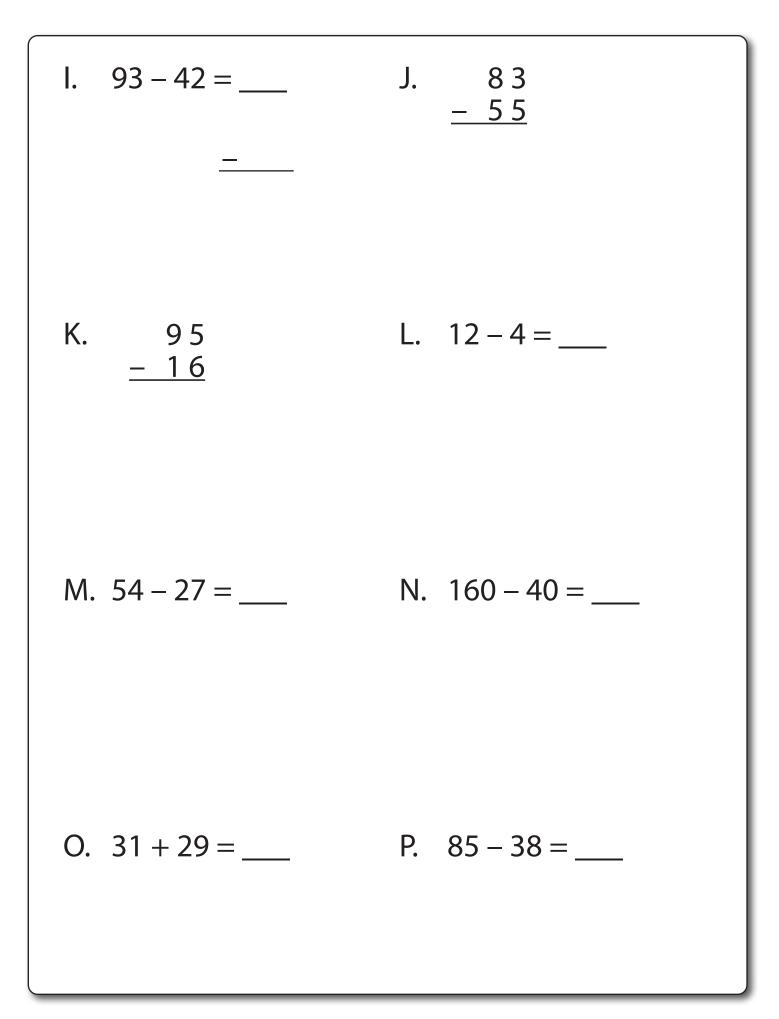
Student Lesson Packets

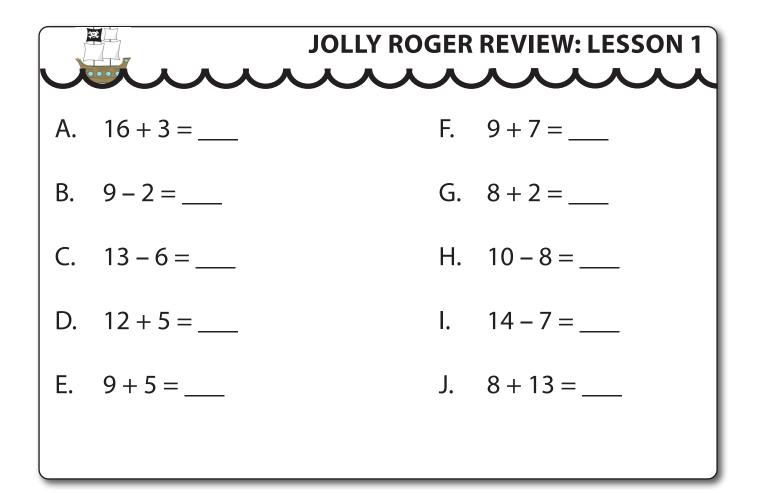




Equation Quest starts in Lesson 3.

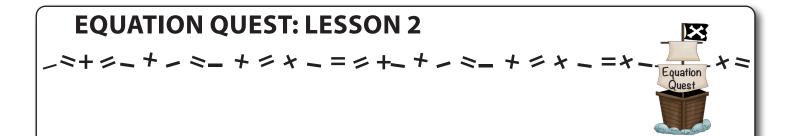




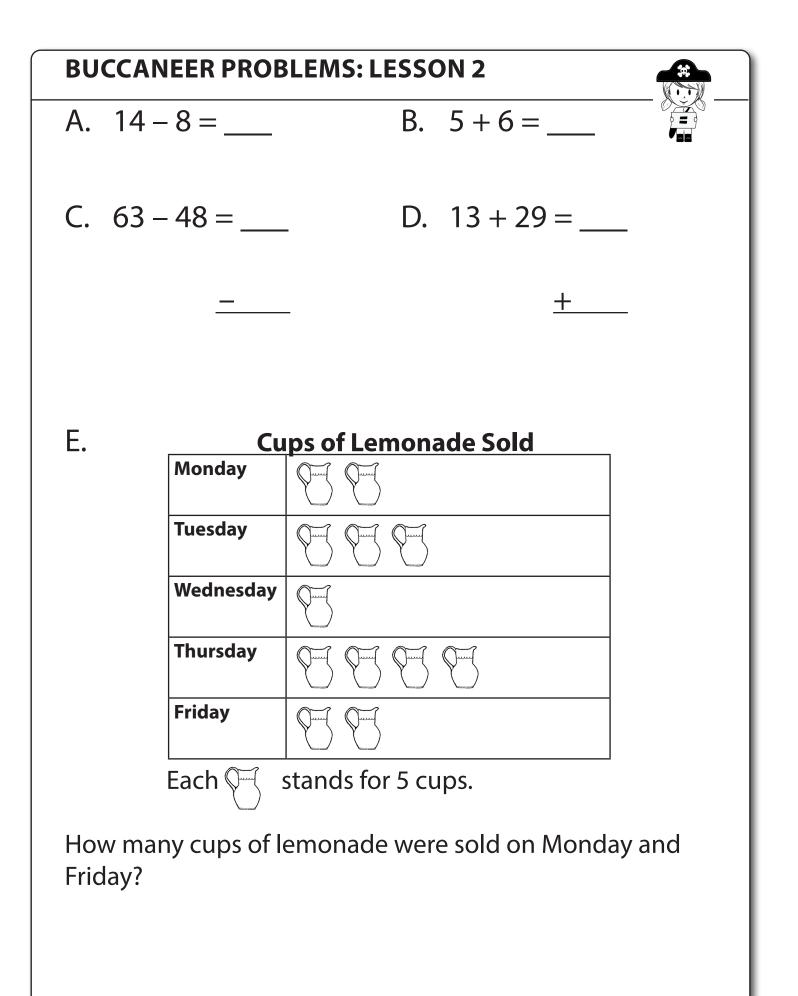


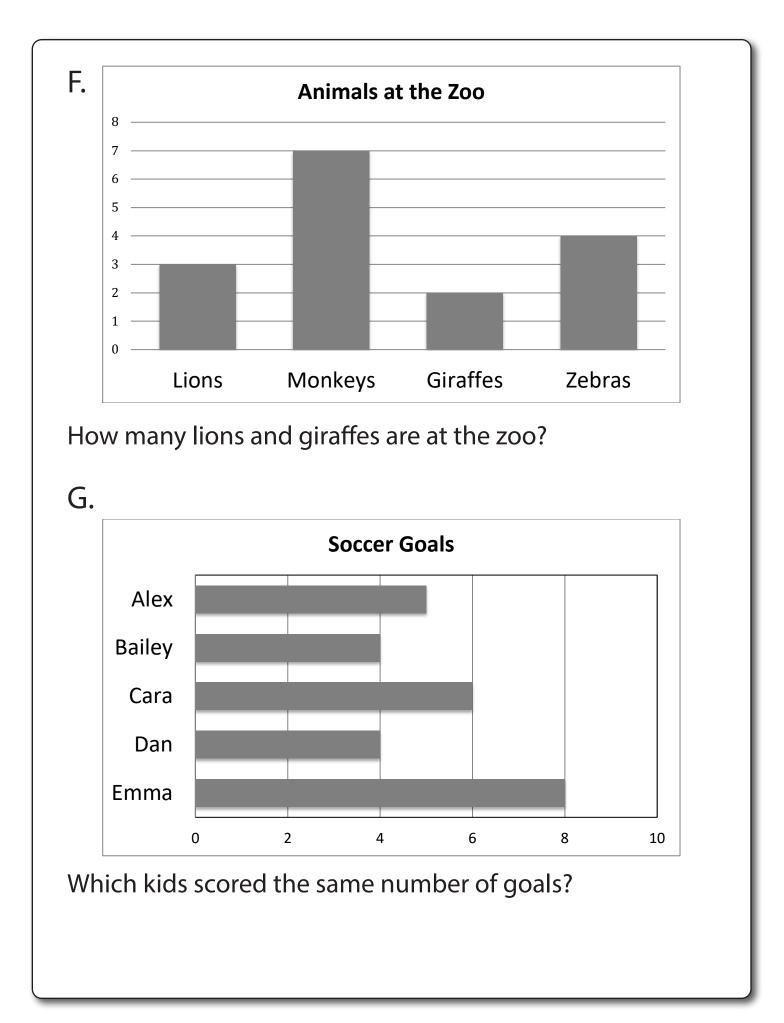


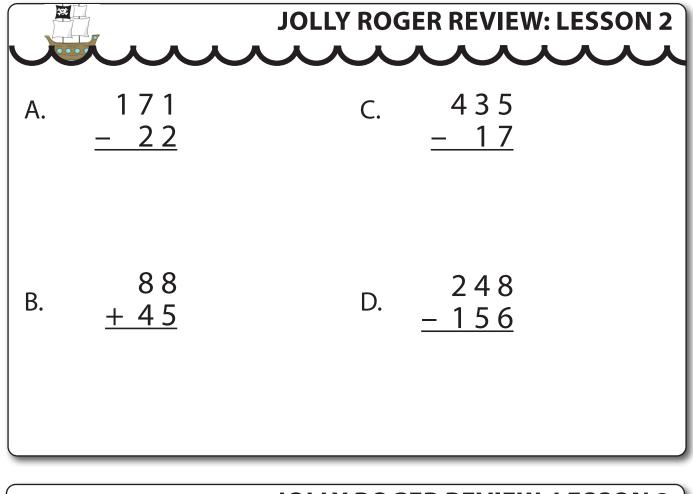
Tessa drew 2 pictures of cats. She drew 5 pictures of dogs. How many pictures did Tessa draw?

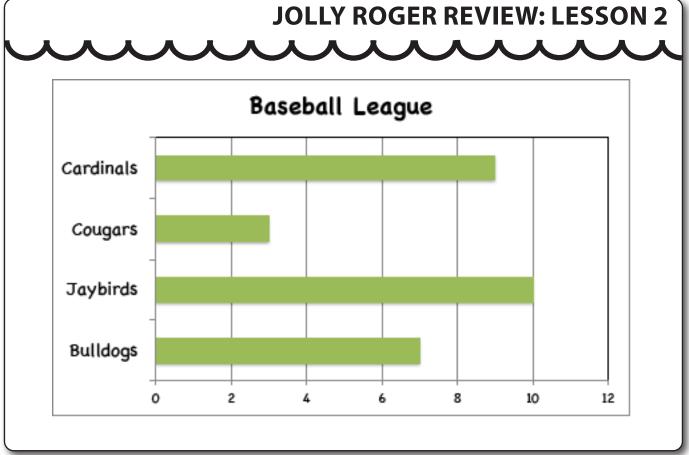


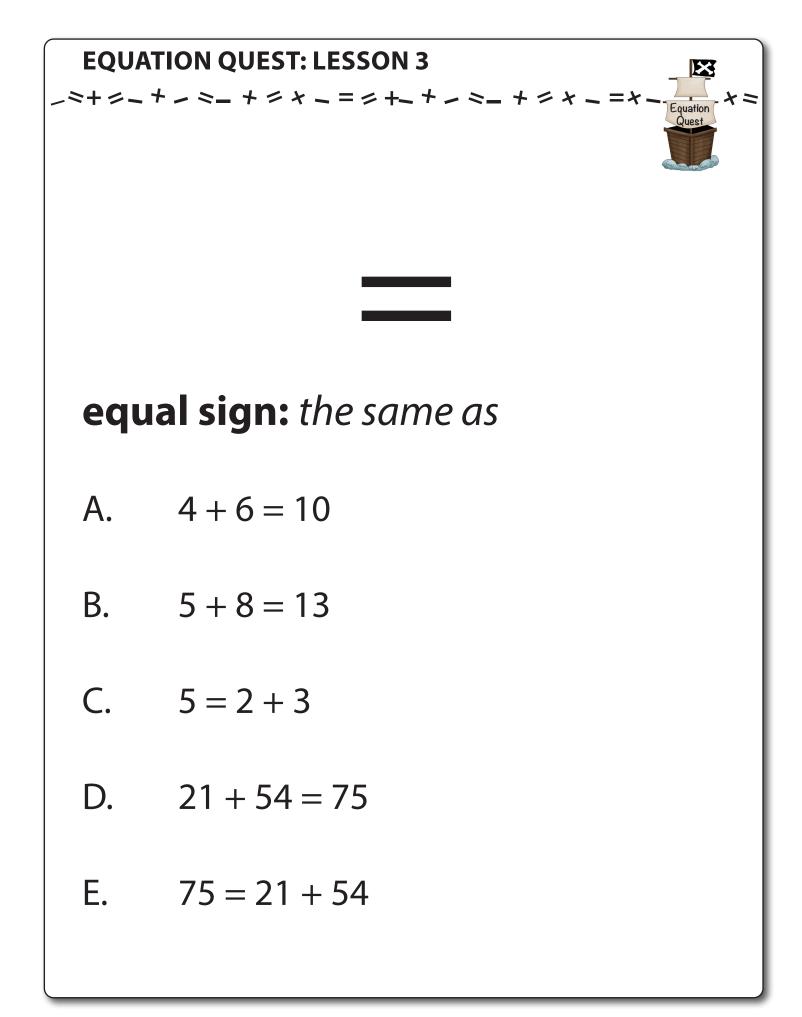
Equation Quest starts in Lesson 3.











BUCCANEER PROBLEMS: LESSON 3

A. Diana has 2 crayons. Stacy has 5 crayons. The girls have 7 crayons in all.

2 + **5** = **7**

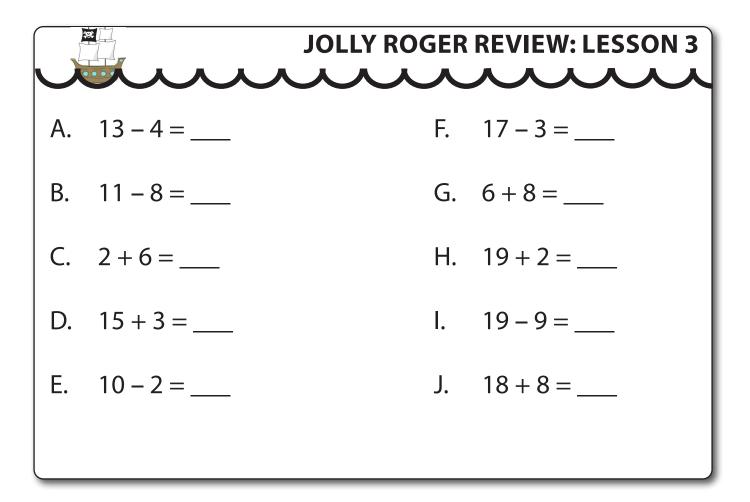


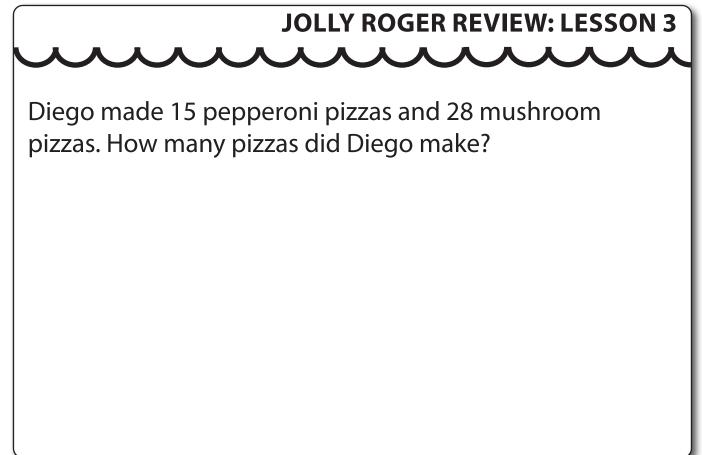


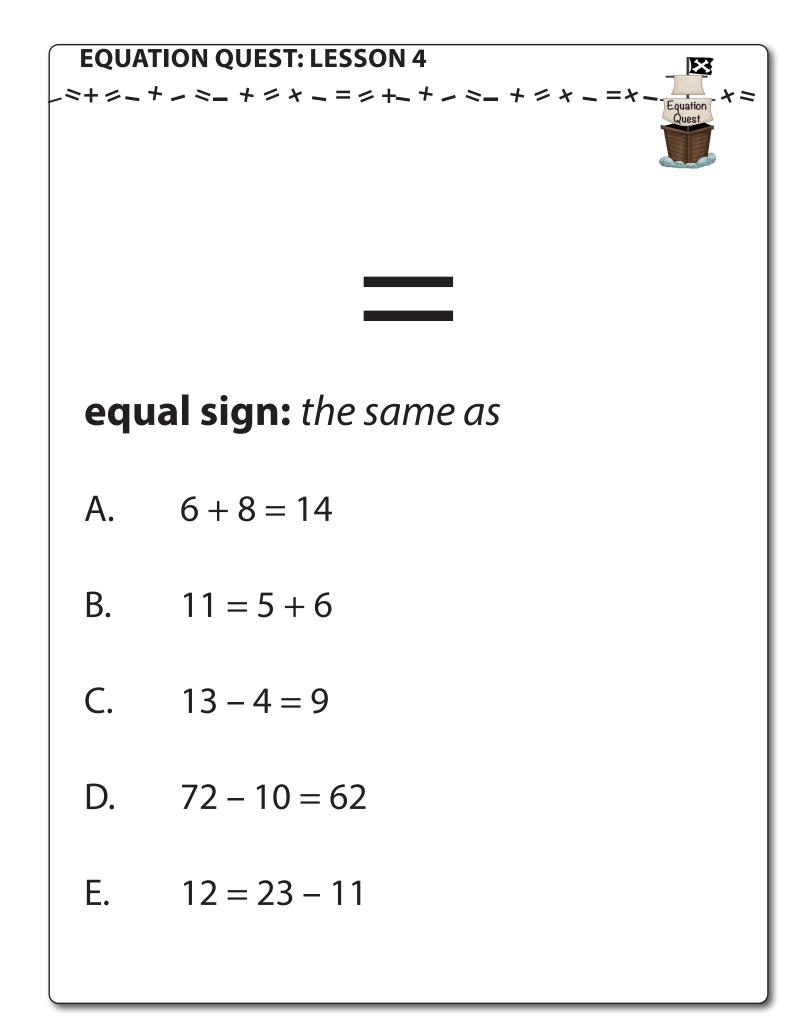


B. Diana has 2 crayons. Stacy has 5 crayons. How many crayons do the girls have together?

C. Marcus sold ice cream. On the first day, Marcus made \$30. On the second day, he made \$25. How much money did Marcus make selling ice cream?







A. Martin went on 65 walks in March, 33 walks in April, and 102 walks in May. How many walks did Martin go on in March, April, and May?

B. The model below shows the dimensions of Ms. Berry's bulletin board. What is the perimeter of the bulletin board in feet?

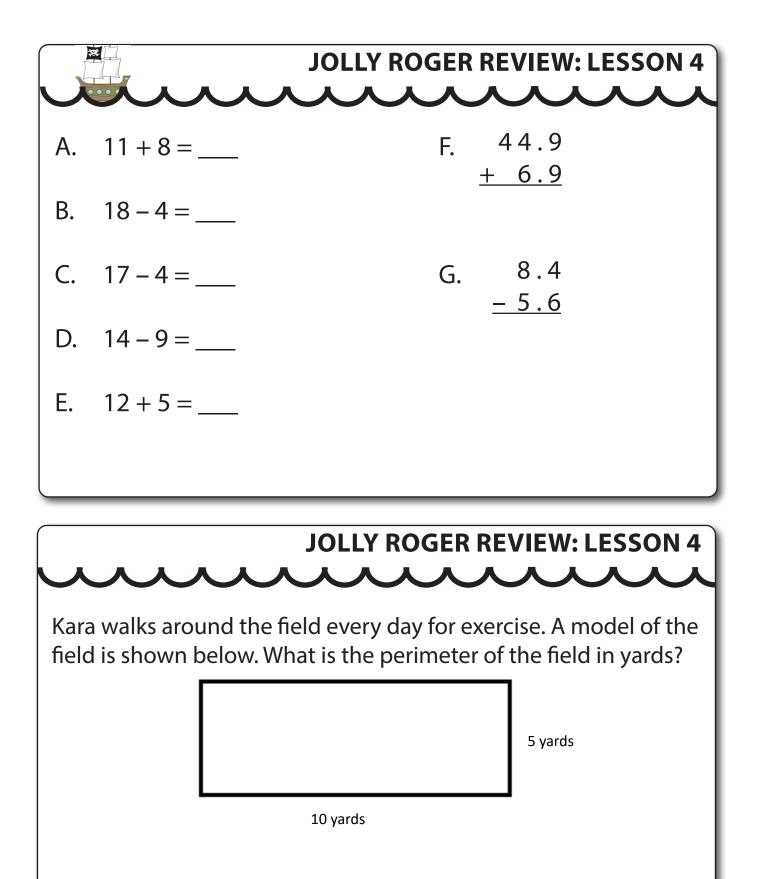


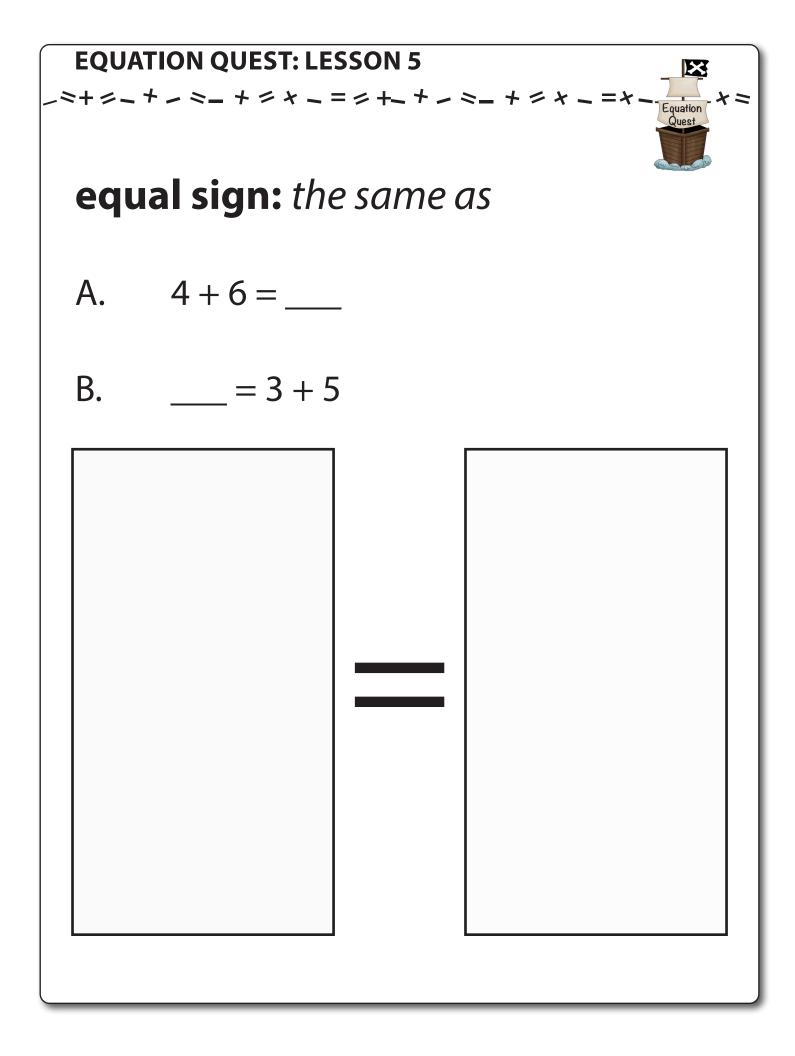
20 ft

C. The table shows the chores Kavon did on Saturday morning and the amount of time he spent on each chore. How much time did Kavon spend raking the yard, cleaning tools, and sweeping the garage?

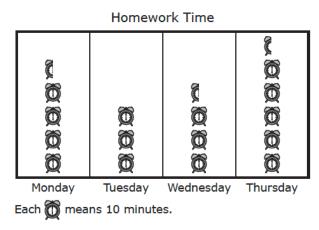
Kavon's Chores		
Chore	Amount of time (minutes)	
	(IIIIIutes)	
Sweeping the garage	40	
Raking the yard	55	
Cleaning tools	35	
Washing the car	45	
Weeding the garden	30	

Kayon's Charas





A. Eliza spent 80 minutes doing homework on Monday and Friday. How long did Eliza spend doing homework on Friday?

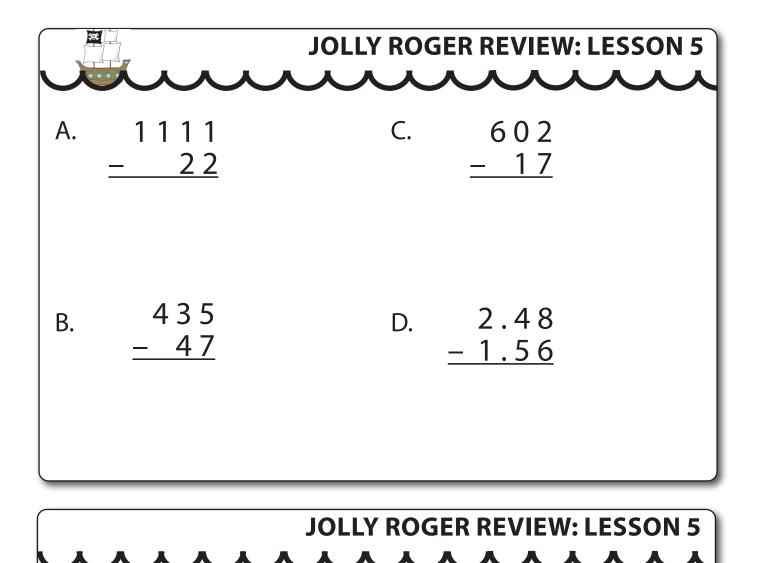


B. Javier's family built a house with 1,368 square feet of space. His family used 640 square feet for the first floor and the remaining square feet for the second floor. How many square feet did the family use for the second floor?

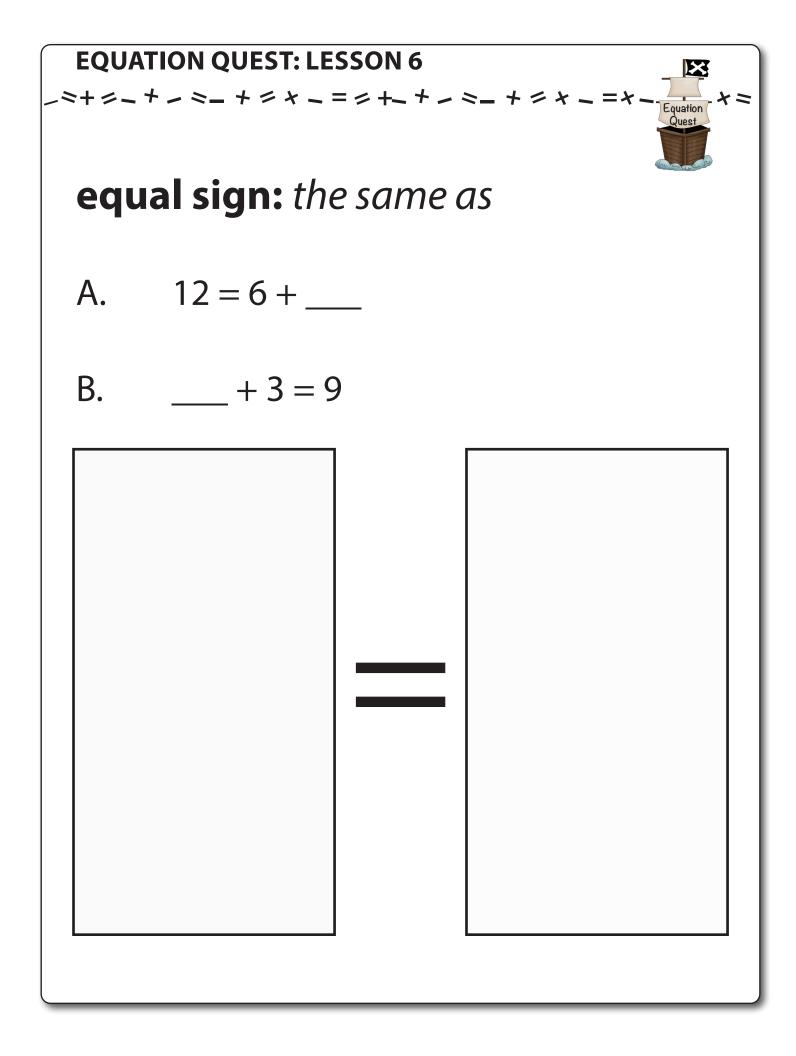
C. The table shows the amounts Mrs. Soto paid for different expenses in October. Mrs. Soto spent \$625.00 on her car payment and gas. How much did Mrs. Soto spend on gas in October?

Expense	Cost
Rent	\$1,600.00
Car Payment	\$365.00
Groceries	\$462.55
Gas	

Mrs. Soto's October Expenses

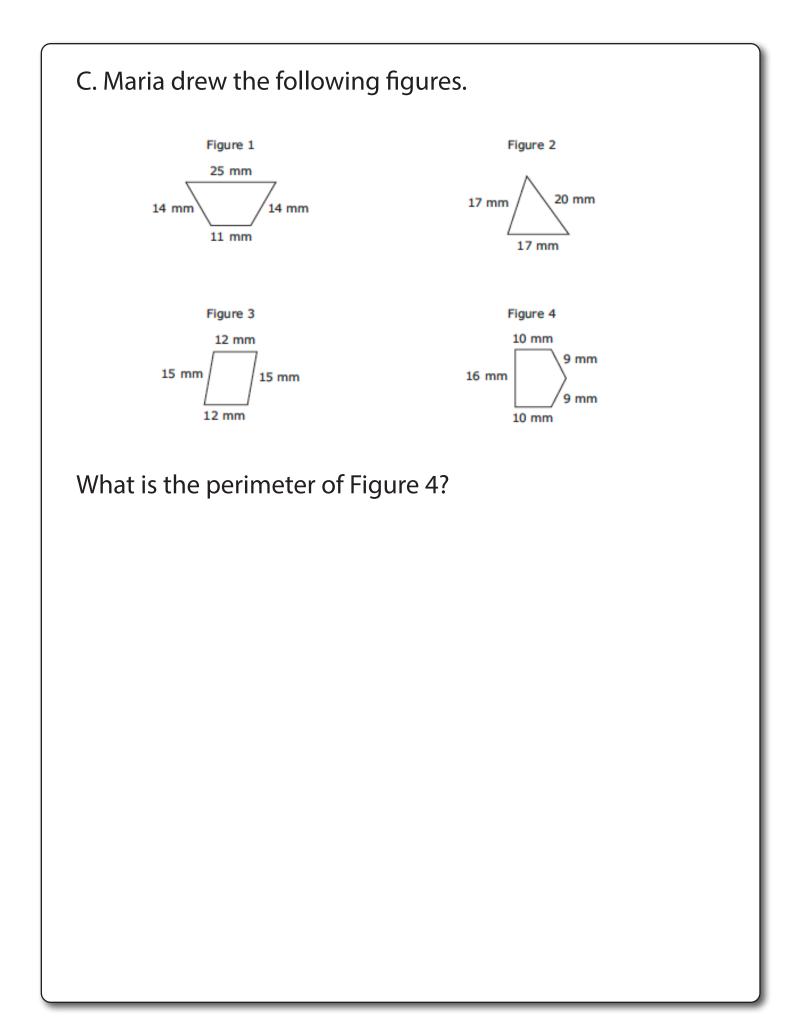


Luke grew 761 vegetables in two years. In the first year, Luke grew 552 vegetables. How many vegetables did he grow in the second year?



A. Together, Dominic and Phoenix completed a 2,000 piece puzzle. If Dominic put 600 pieces together for the puzzle, how many pieces did Phoenix put together?

B. There are 230 third and fourth graders at the assembly. If there are 144 third graders, how many fourth graders are at the assembly?



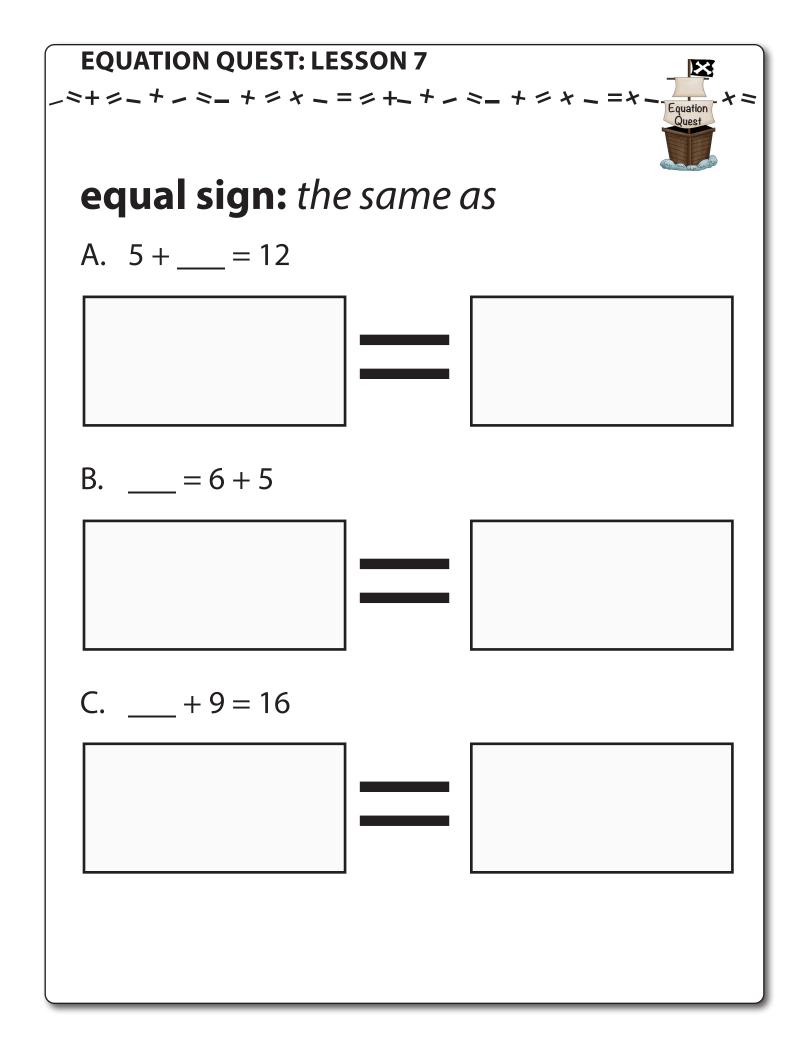
	· · · ·		REVIEW: LESSON 6
A.	489 <u>+619</u>	D.	60 <u>- 49</u>
B.	304 <u>- 212</u>	E.	88 <u>+93</u>
C.	64 <u>- 19</u>	F.	27 <u>+92</u>

JOLLY ROGER REVIEW: LESSON 6

The table shows the cartons of milk the grocery store sold last week. On Friday and Saturday, 997 cartons were sold. How many cartons were sold on Saturday?

Milk

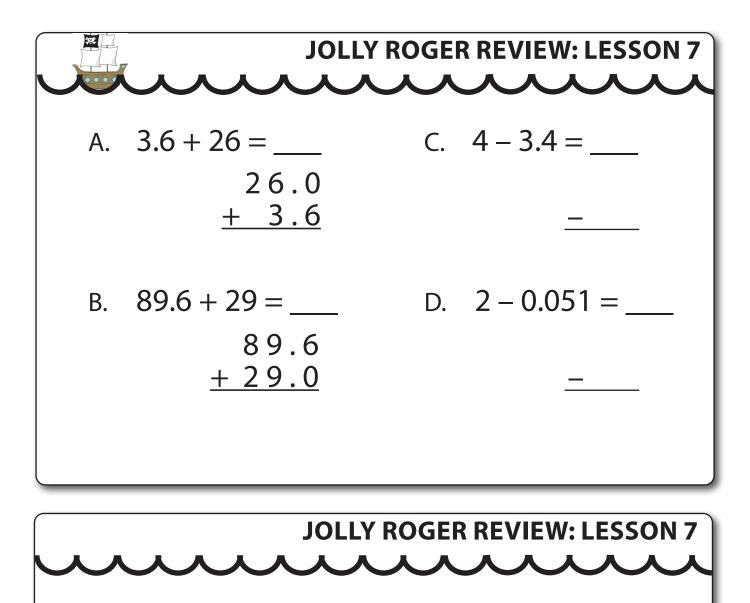
Day	Number of Cartons Sold
Monday	352
Tuesday	426
Wednesday	449
Thursday	373
Friday	402



A. Samuel made \$160 trimming the hedges and \$105 cleaning his room. He also made \$26 for folding laundry. How much money did Samuel make doing chores?

B. Linda bought 56 curly bones and green chews for her dog Rosie. If there were 19 green chews, how many curly bones did Linda buy?

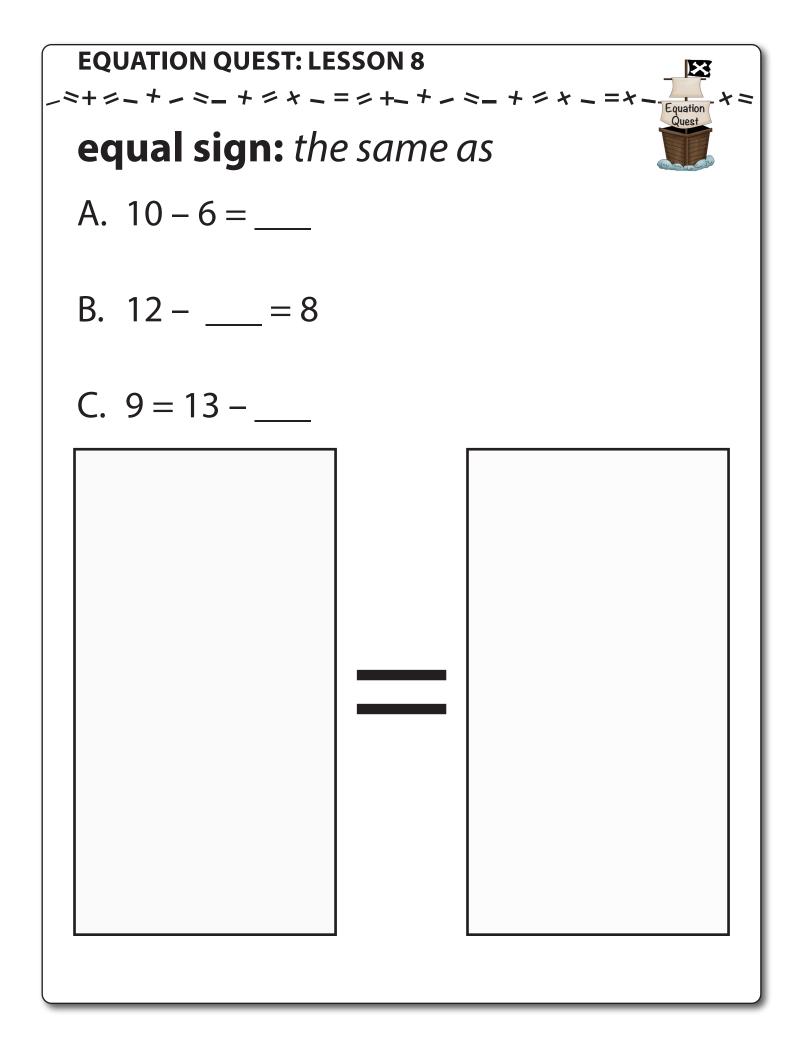
C. Visha made a triangular sign with a perimeter of 58 cm. Two sides of the triangle measured 14 cm and 32 cm. What was the length of the third side?

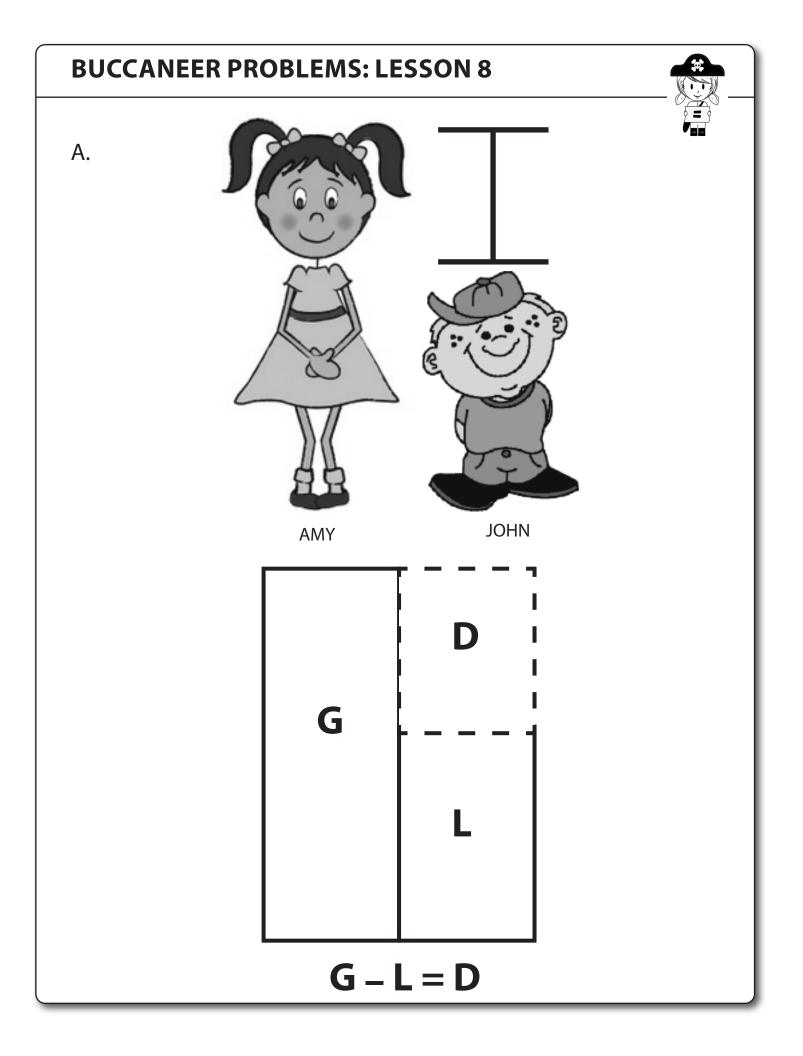


All of the sides of Figure X are congruent (same size, same shape). The length of one side of the figure is shown below. What is the perimeter of Figure X?



11 cm



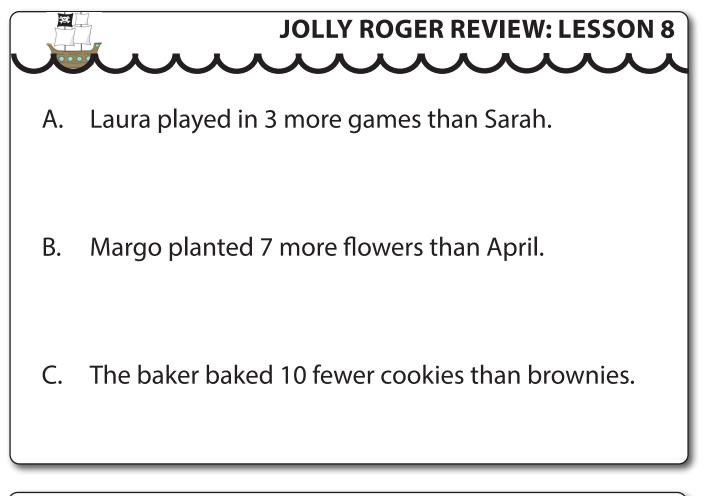


B. Kim scored 7 goals in Friday's soccer game. She scored 5 goals in Saturday's soccer game. How many more goals did she score on Friday?

C. Mitchell picked flowers from a field. The pictograph shows how many of each type of flower he picked. How many more roses than daisies did Mitchell pick?

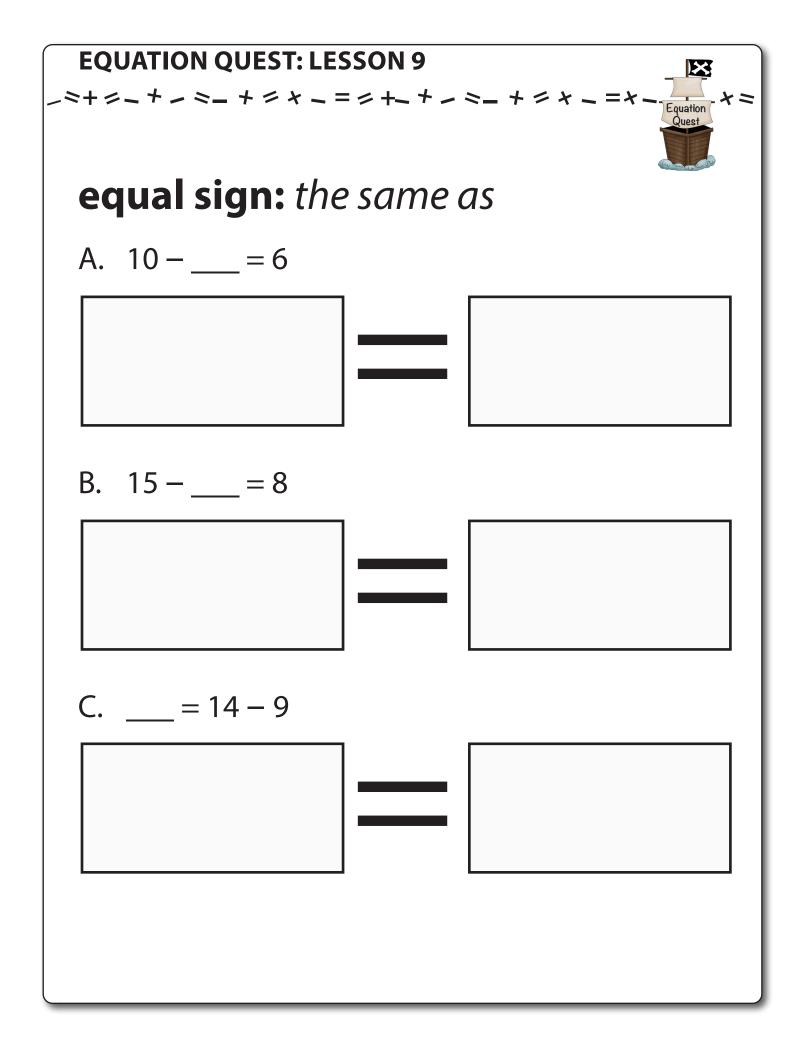


Each flower = 10 flowers





The giraffe is 33 feet tall. The gorilla is 14 feet tall. What is the difference between the heights of the two animals?



A. Maya has 7 more pets than Paul. Paul has 3 pets. How many pets does Maya have?

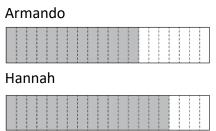
B. Maya is 7 years old. Paul is 3 years old. How many years older is Maya?

C. The giraffe is 5 feet taller than the monkey.

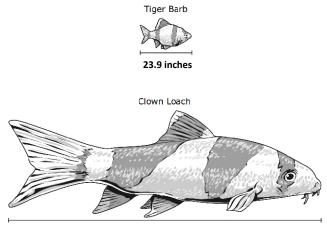
D. Today is warmer than yesterday.

E. The shark swims faster than the dolphin.

F. Armando and Hannah read the same book. The shaded part of the model represents the number of chapters each student read. How many fewer chapters did Armando read than Hannah?



G. Latoya has the two fish shown below in a fish tank.



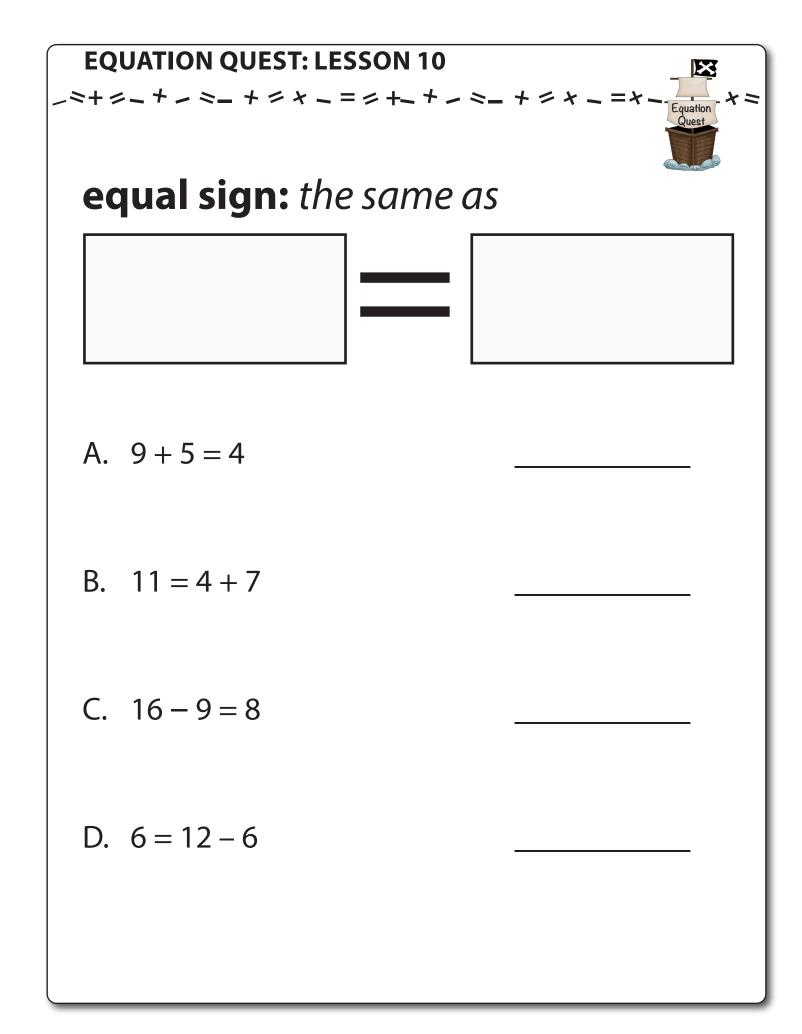
54.1 inches

What is the difference in inches between the lengths of these two fish?

- JOLLY ROGER REVIEW: LESSON 9
 - A. How much less money did Suzanne spend than Ayesha?
 - B. Anna ate more candy than Jeremiah.
 - C. How many more apples did Mr. Thomas buy than bananas?



Larisha spent \$19.00 on clothes at the mall. She spent \$38.00 on snacks at the food court. How much more did Larisha spend on snacks than clothes?



A. 88 dogs are running in the park. 44 dogs are sleeping in the grass. How many more dogs are running than sleeping?

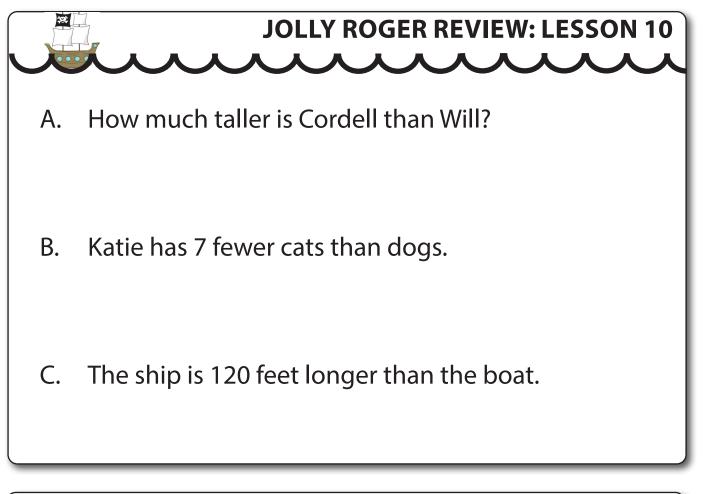
B. 88 dogs are running in the park. 44 dogs are sleeping in the grass. How many dogs are there?

C. The table shows the amounts Billy and Sally paid for electricity each month for the last five months.

Electricity Expenses

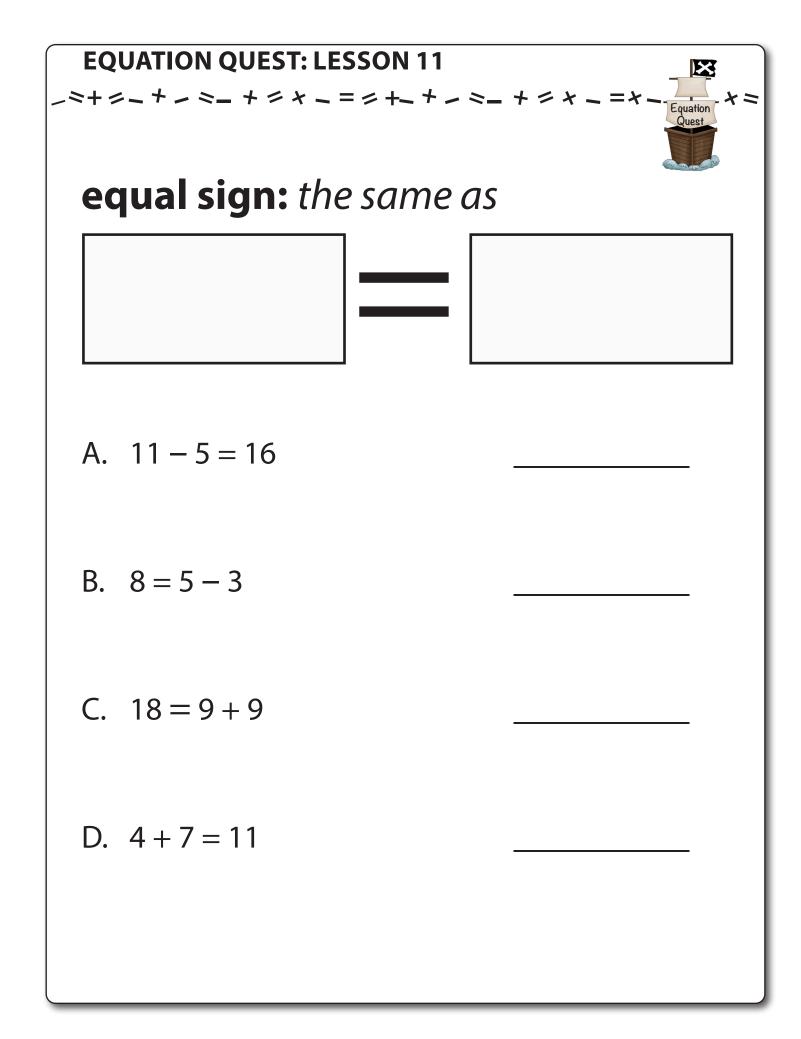
Month	Amount Billy Paid	Amount Sally Paid
January	\$89.00	\$112.00
February	\$89.00	\$87.50
March	\$88.00	\$90.00
April	\$88.50	\$105.50
May	\$87.00	\$138.50

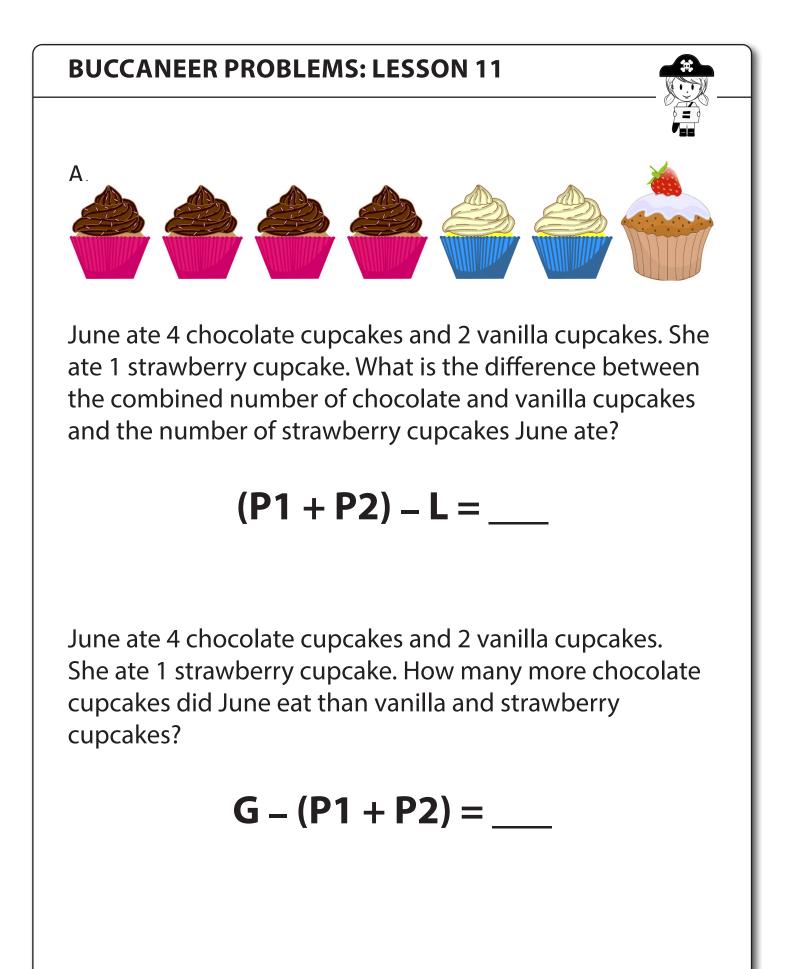
Based on the table, how much less did Billy pay for electricity in May than Sally?



JOLLY ROGER REVIEW: LESSON 10

Joe and Maggie talked on the phone for 670 minutes. If Joe talked on the phone for 345 minutes, for how many minutes did Maggie talk on the phone?



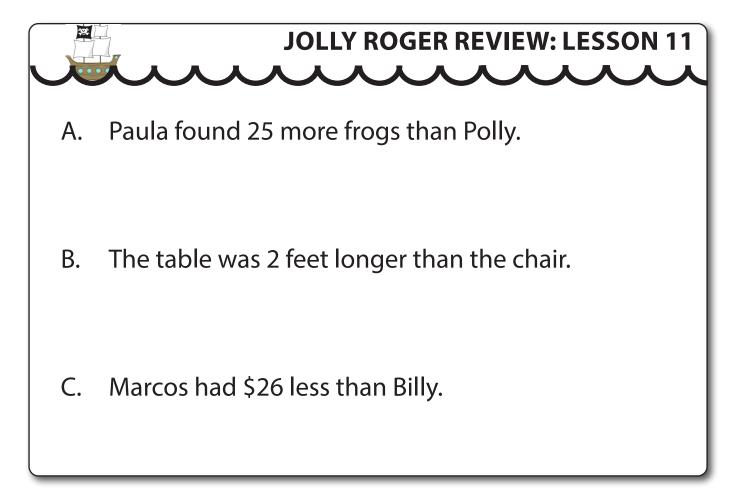


B. Frank used the following ingredients to make trail mix:

- 34 ounces of granola
- 20 ounces of raisins
- 16 ounces of chocolate chips

What was the difference between the combined amount of raisins and chocolate chips and the amount of granola Frank used?

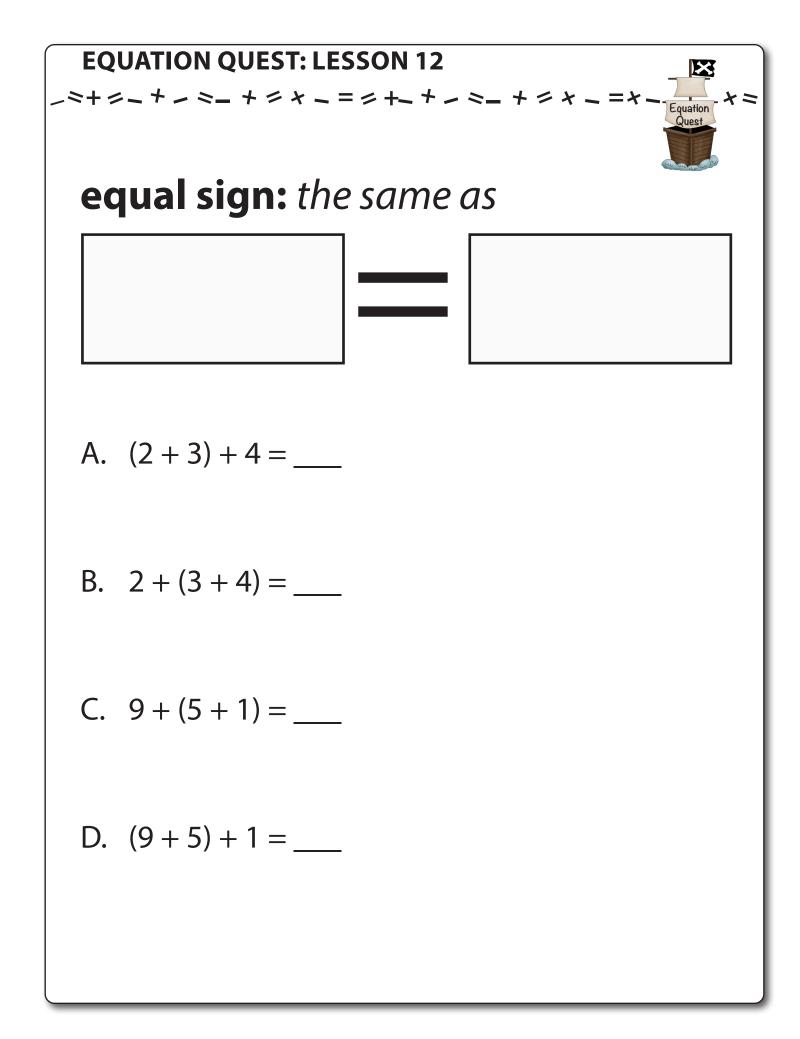
C. Ray has 14 blue shirts and 34 red shirts. Ray also has 22 pairs of pants. How many fewer pairs of pants does Ray have than shirts?

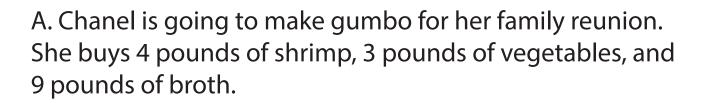


JOLLY ROGER REVIEW: LESSON 11

Jason bought a slushy and Junior Mints at the snack bar. What is the difference between the amount Jason spent and the cost of a soda?

Snack Bar		
Item	Price	
Slushy	\$2.50	
M&Ms	\$1.75	
Junior Mints	\$1.50	
Soda	\$1.00	





How many more pounds of broth than shrimp and vegetables did Chanel buy?

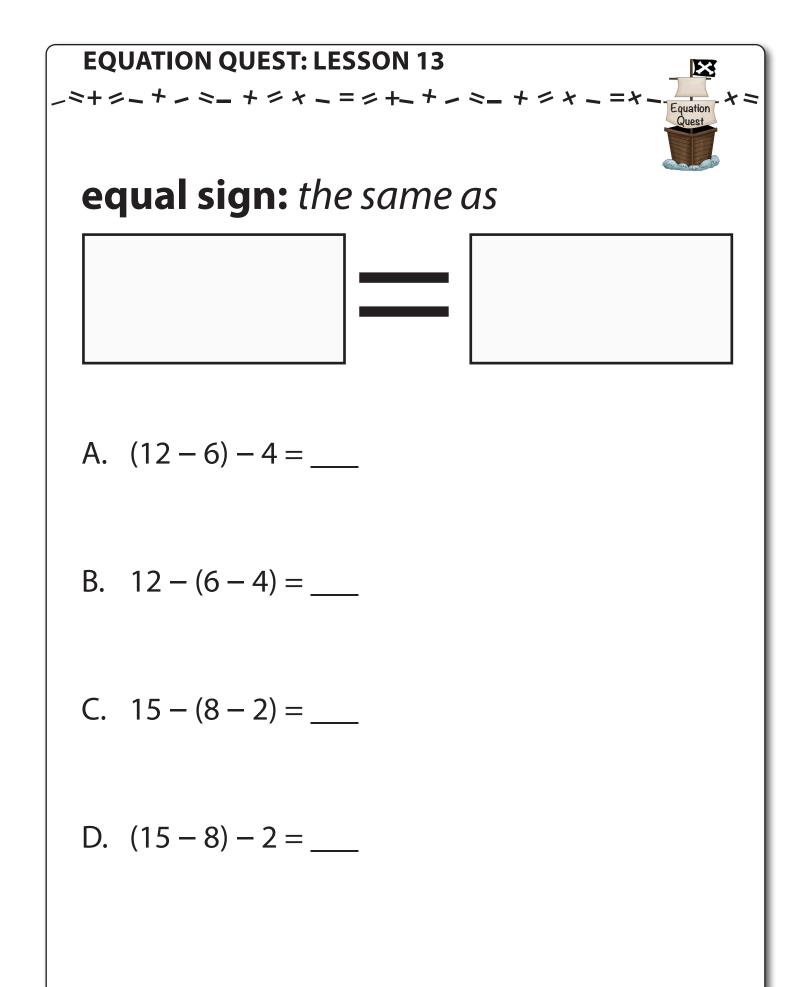
B. At the book fair, Vanessa bought a book for \$8.00 and a bookmark for \$2.00. If Jennifer spent \$20.00 at the book fair, how much more money did Jennifer spend than Vanessa?

C. Julie is making soup. She uses 3 pounds of carrots, 3 pounds of onions, and 7 pounds of chicken.

How many more pounds of chicken than vegetables did Julie use?



Zoey spent \$10 on hot dogs and \$6 on hamburgers for the cookout. Her mom spent \$23 on drinks. How much more money did Zoey's mom spend than Zoey?



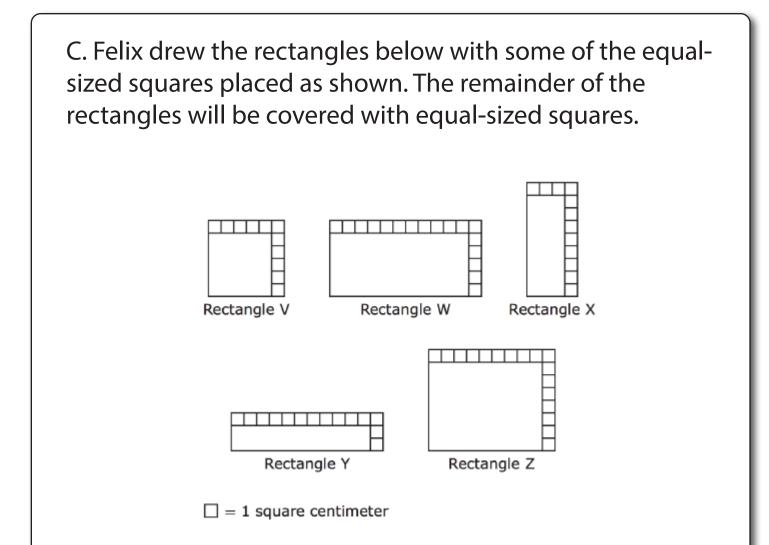
A. The table shows the baseball runs scored by each team.

Baseball Runs Scored

Team	Total Number of Runs Scored
R	61
S	92
Т	270
U	65
V	72
W	64
Х	84

Based on the table, how many more combined runs did Teams R and S score than Team W?

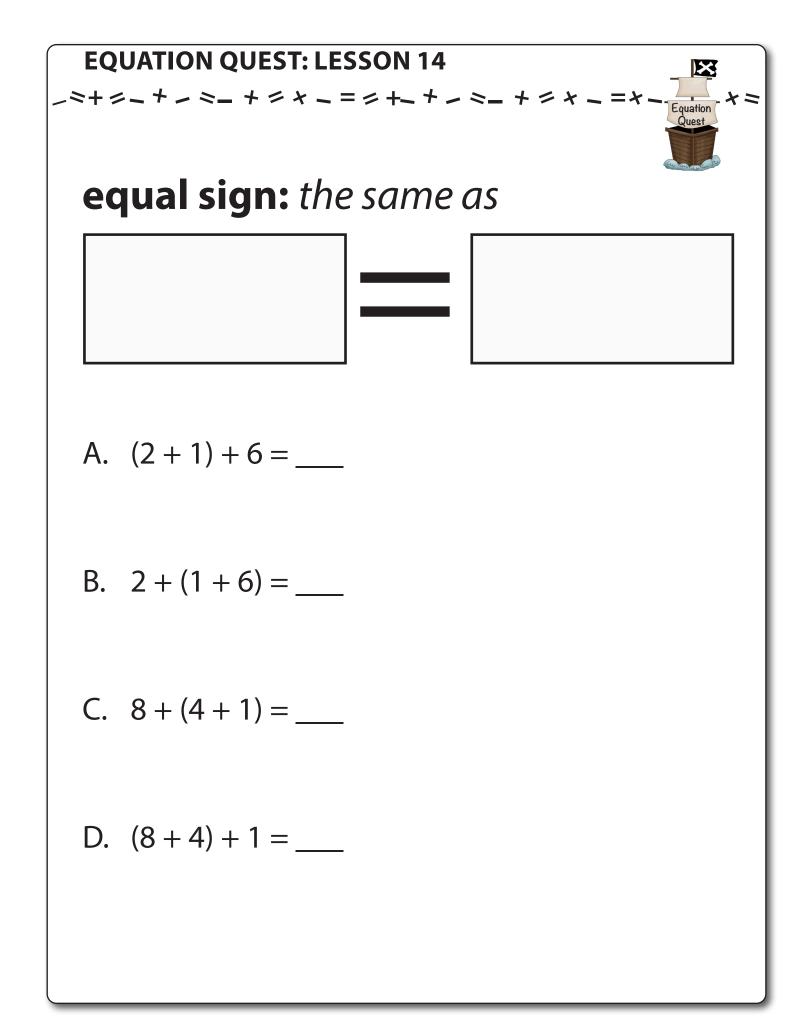
B. Based on the table above, how many more runs did Team T score than Teams R and S combined?



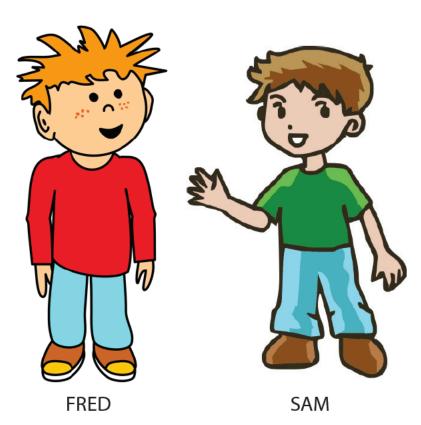
The perimeter of Rectangle X is 26 square centimeters. How much less is the perimeter of Rectangle V than Rectangle X?



Emily has 24 tacos and 39 burritos. Emily also has 25 bowls of queso. How many fewer bowls of queso does Emily have than tacos and burritos?



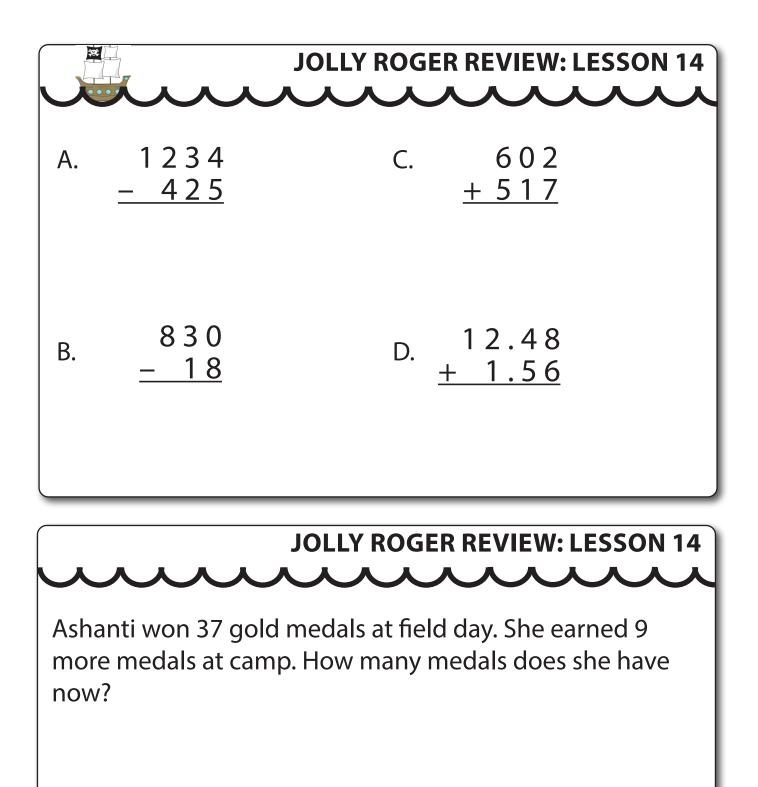
A. Fred had 2 crayons. Then, his friend Sam gave him 5 more crayons. Now, Fred has 7 crayons.

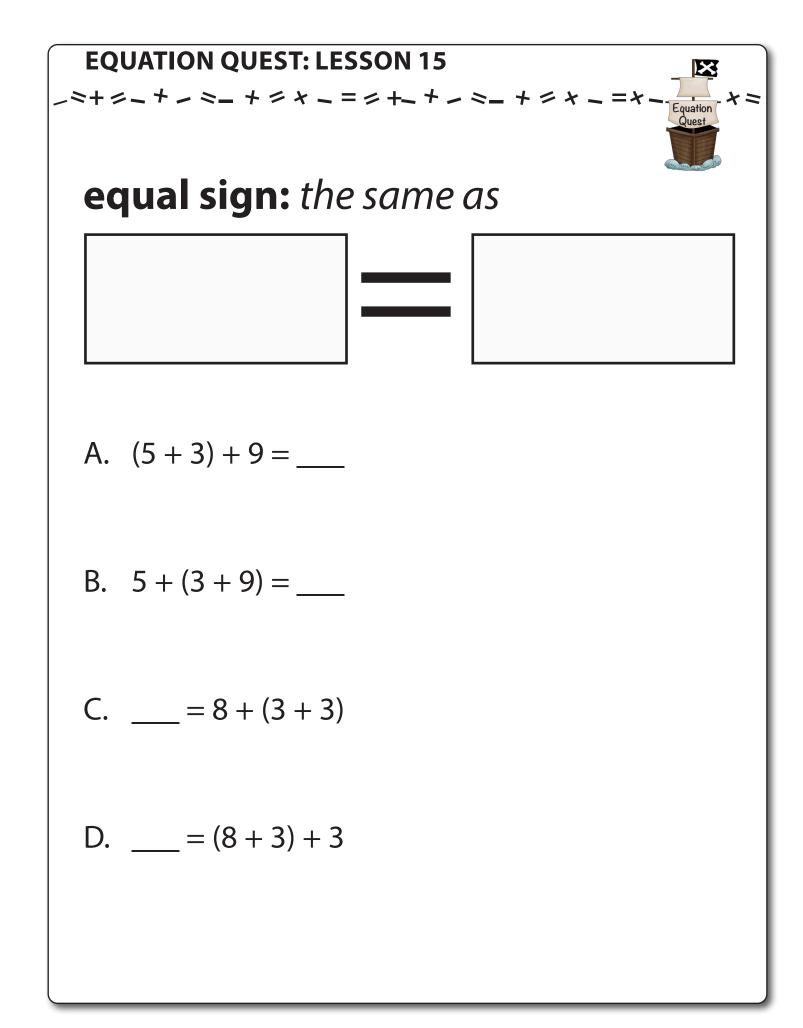


B. Harry had 9 crayons. Then, he gave 3 crayons to Will. Now, Harry has 6 crayons.



C. Sebastian went bowling with his friends. During the first game, he earned 75 points. Then, he earned 128 more points in the second game. How many points has Sebastian earned now?

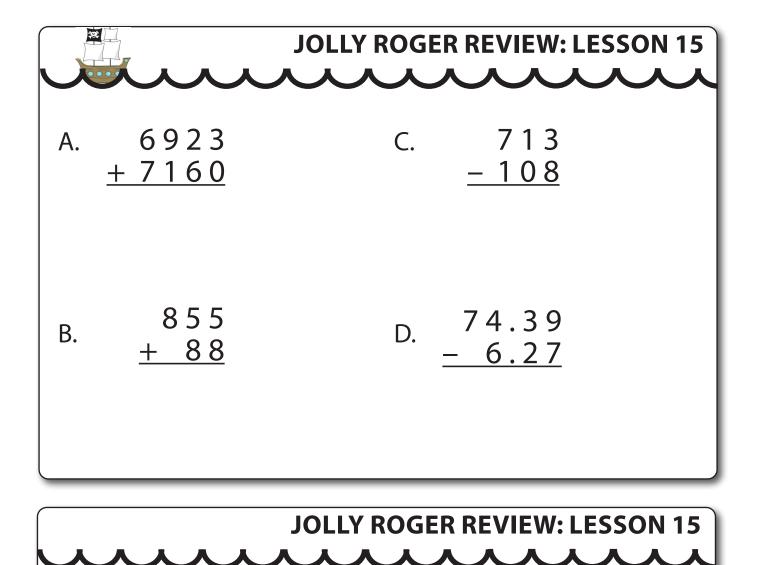




A. The tree had 196 birds. In the winter, 88 birds flew south. How many birds are on the tree now?

B. The tree had 196 birds that flew from the north and the south. If 88 birds flew from the north, how many birds flew from the south?

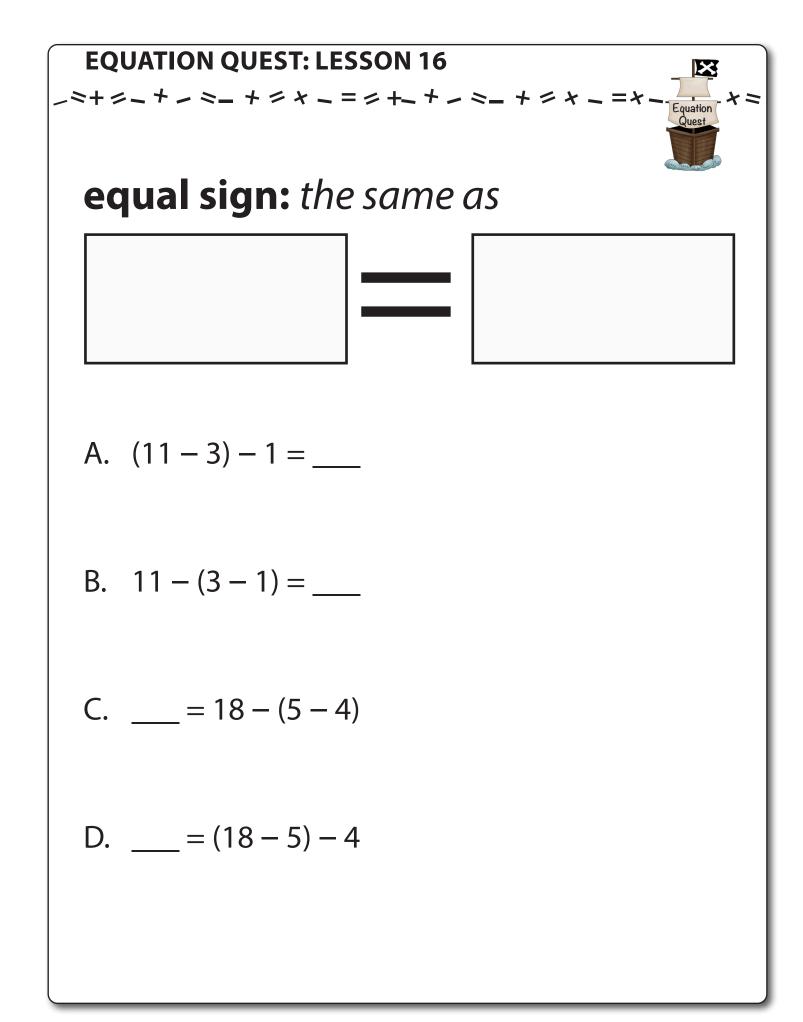
C. The tree had 108 birds that flew from the south and 88 birds that flew from the north. How many fewer birds flew from the north?



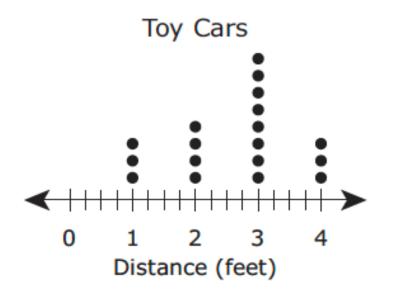
Maria had \$30. At the store, she bought a doll house. How much money does Maria have now?

Toy Prices	
Video	
Blocks	
Doll House	

Each 🖧 stands for \$5.

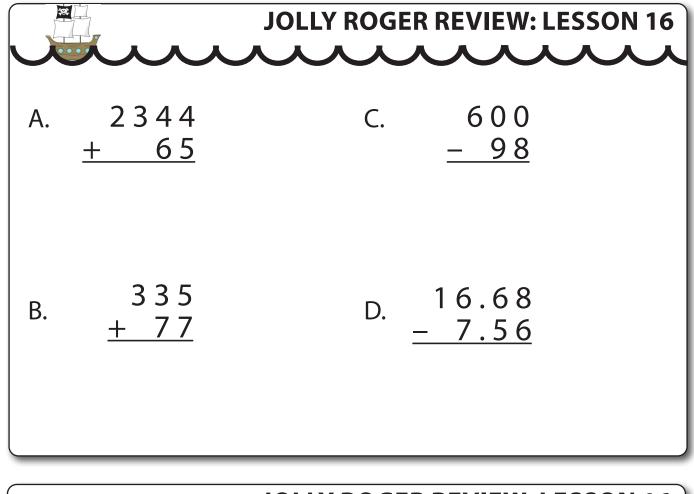


A. The dot plot shows the number of toy cars that rolled different distances.



Mila took all of the cars that rolled 3 feet home. Then, she gave some of the cars to her brother. Now, she has 4 cars left. How many cars did Mila give to her brother? B. Donnell cooked some omelettes in the morning, then his family brought over 10 omelettes. Now, Donnell has 13 omelettes. How many omelettes did Donnell cook in the morning?

C. The surfers rode 39 waves before stopping for lunch. After lunch, they rode some more waves. By the end of the day, the surfers had ridden 56 waves. How many waves did they ride after lunch?

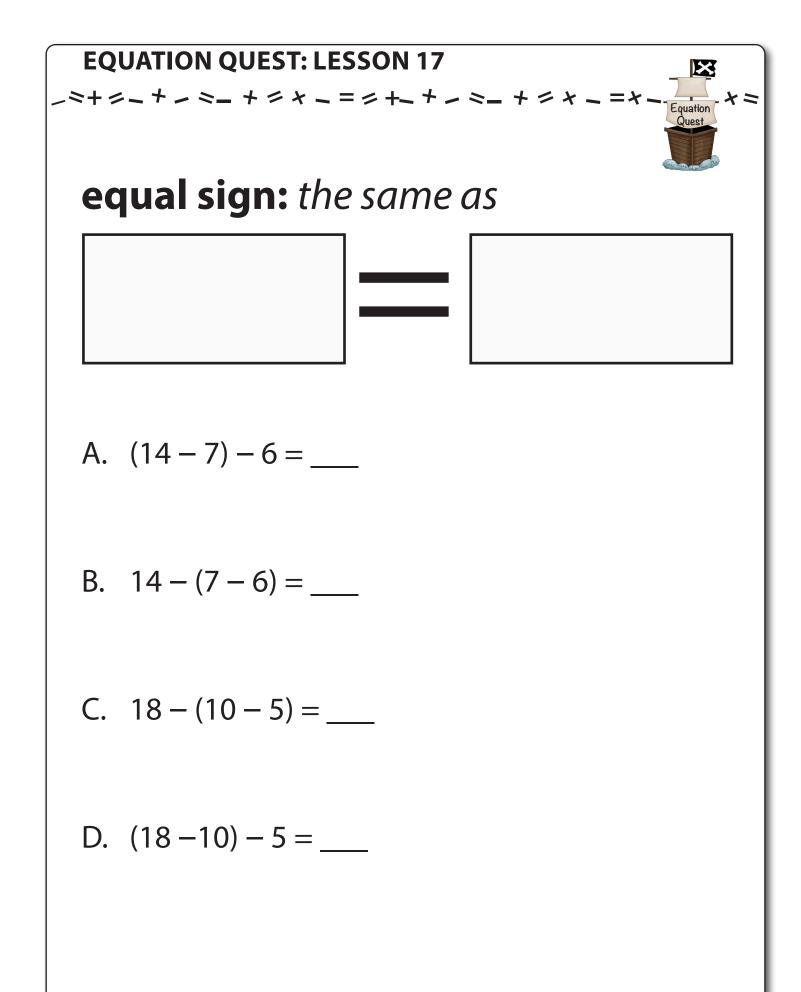


JOLLY ROGER REVIEW: LESSON 16

The table below shows the puzzle pieces in four puzzles. Dante put together the waterfall puzzle. Then, he lost some of the pieces. If Dante has 408 pieces, how many pieces did he lose?

Puzzle Pieces

Puzzle	Number of Pieces
Lion	402
Boat	498
Garden	419
Waterfall	473

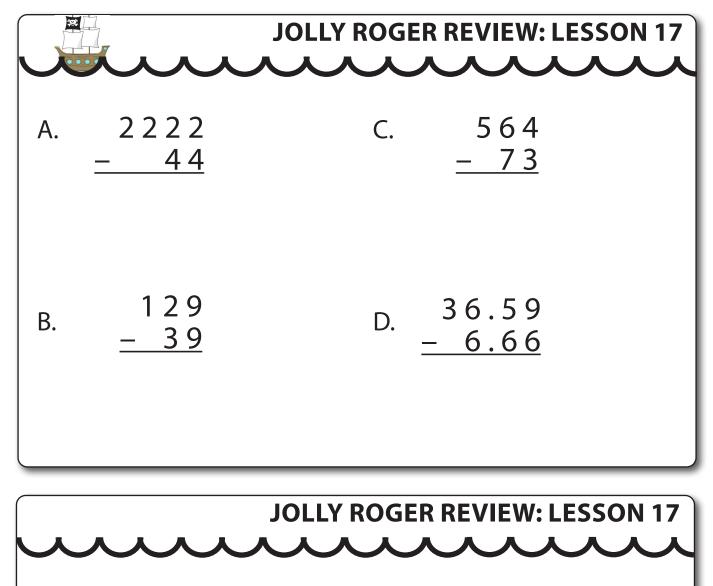


A. There were 56 children at the park. In the afternoon, more children came to the park. Now, there are 156 children. How many children came to the park in the afternoon?

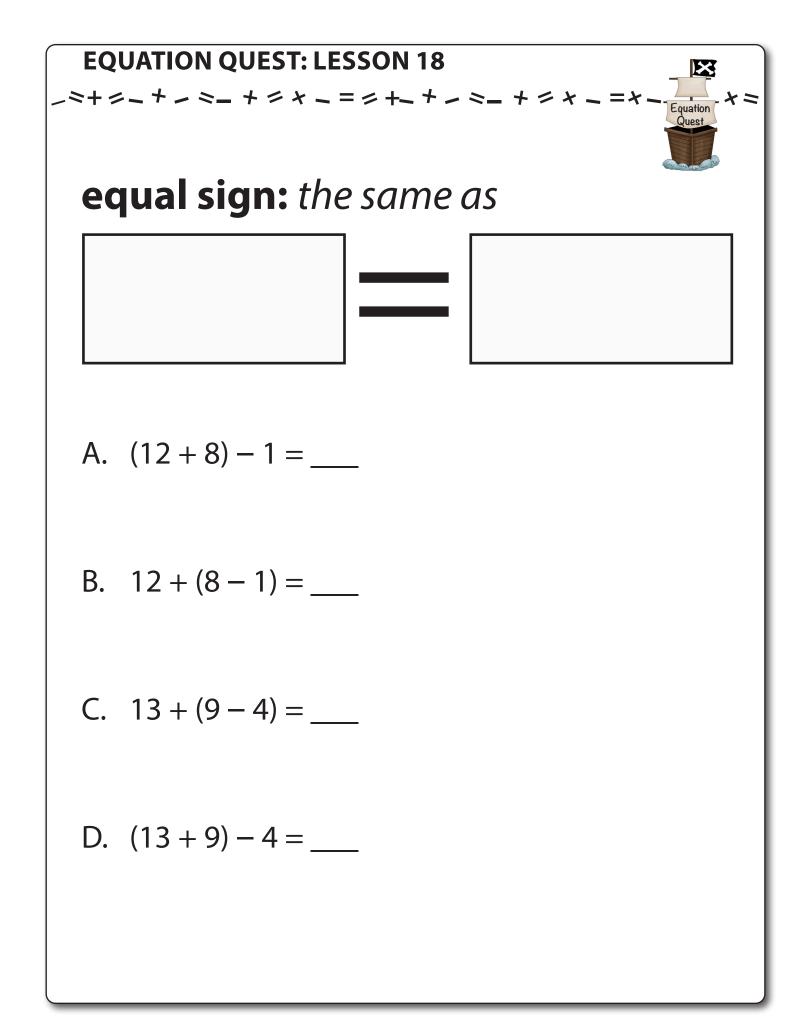
B. Liam had some pencils. Then, he broke 36 pencils. The picture below shows the number of pencils Liam has remaining.

How many pencils did Liam have to start with?

C. Melissa brought money to spend at the yard sale. She bought a book for \$4. The cashier gave her \$11 in change. How much money did Melissa bring to the yard sale?



Aniyah has a bucket of 1,322 colored markers. Jamar has a bucket of 6,443 colored markers. How many fewer markers does Aniyah have than Jamar?



A. The table below shows the boxes of Girl Scout cookies Tara sold last week.

Cookies	Boxes Sold
Trefoils	25
Peanut Butter Patties	65
Thin Mints	72
Samoas	50
S'Mores	8

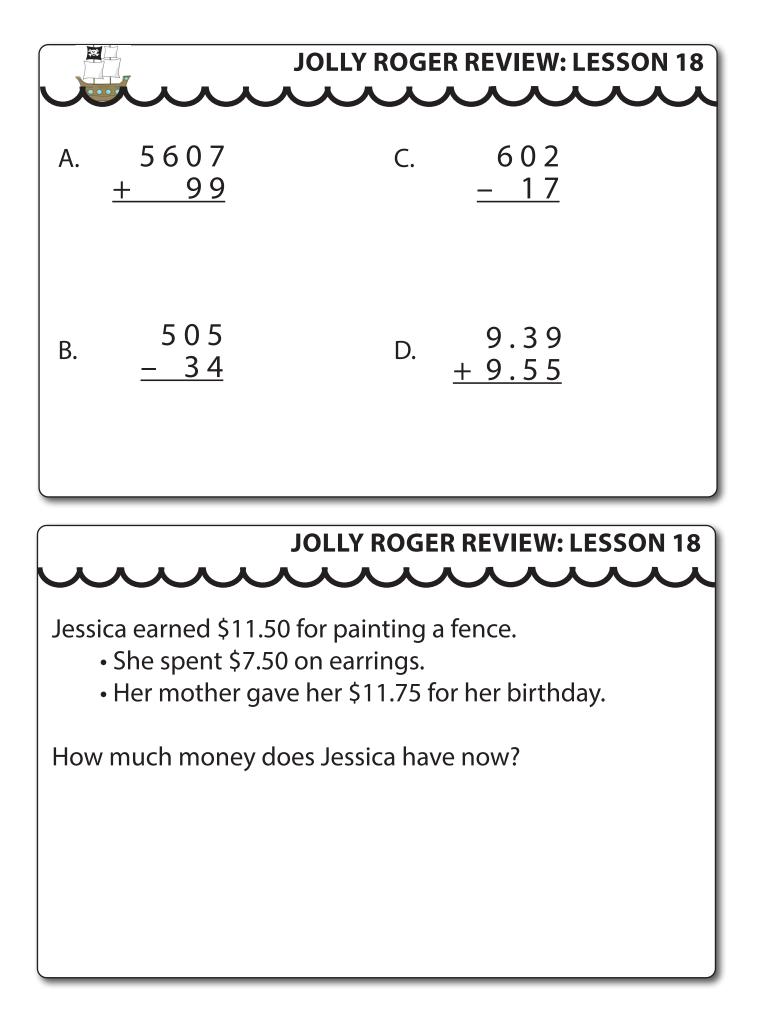
Girl Scout Cookies

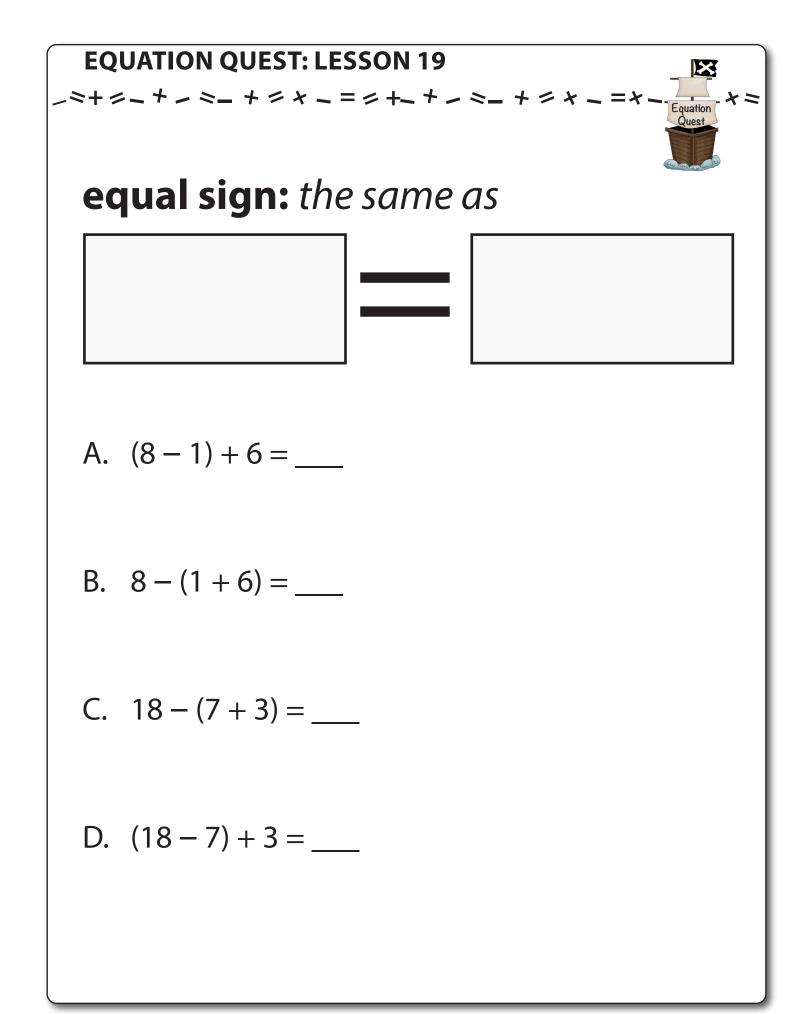
She ate 4 boxes of Thin Mints, then she gave 5 boxes of Thin Mints to her friend. Then, her brother gave her 15 more. How many boxes of Thin Mints does Tara have now? B. Lindsey ran 2 miles alone.

- Then, she ran another 10 miles with her sister.
- Next, she ran 3 miles with her dad.
- She also ran 5 miles with her mom.

How far did Lindsey run?

C. Kasey has a \$10 bill to spend at the carnival. She buys one game for \$5, two bags of popcorn for \$1 each, and a stuffed bear for \$2. How much money does Kasey have left?





A. The table below shows the number of coats and sweaters donated during a clothing drive.

Clothing Drive

Day	Coats	Sweaters
Wednesday	83	31
Thursday	58	14
Friday	71	50

What is the difference between the number of coats donated on Wednesday and Thursday and the number of sweaters donated on Friday?

B. The prices for items at an ice cream shop are shown in the table. Julie buys two large sundaes and a large ice cream cone. How much change will she receive from a \$20 bill?

ltem	Small Size	Large Size
lce cream cone	\$1.50	\$2.25
Sundae	\$3.75	\$5.00
Frozen yogurt	\$1.75	\$2.50
Milkshake	\$4.00	\$5.50

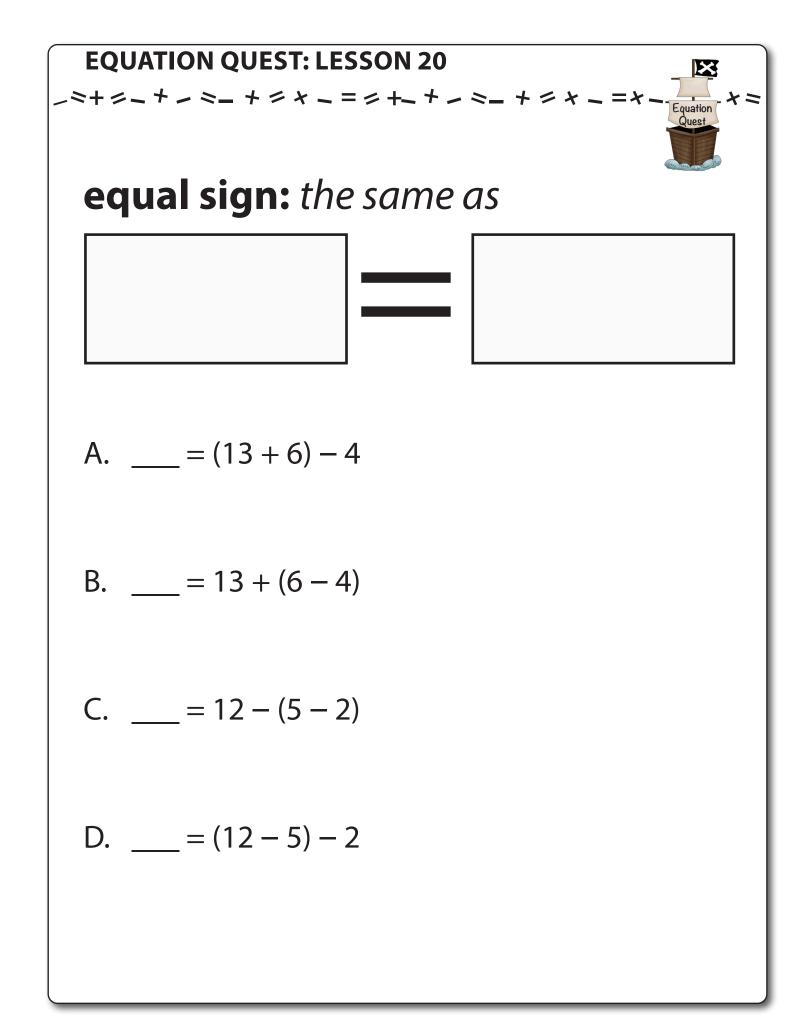
Prices at the Ice Cream Shop

C. Mr. Gomez sold 30 rings during Week 1 and 50 rings during Week 4. He sold 40 rings during Week 5. How many more rings did Mr. Gomez sell in Weeks 1 and 4 than in Week 5?

		DGER REVIEW: LESSON 19
Write the Total Equation.		
Write the Difference Equ	ation.	
Write the Change Equati	on.	
Write the Total and Diffe (combined amount is gro	•	
Write the Total and Diffe (combined amount is les	•	



Hattie hosted a party. She bought 35 pink balloons. She also bought 5 orange balloons and 7 yellow balloons. How many more pink balloons than orange and yellow balloons did Hattie buy?



A. The model below represents Jack's rectangular vegetable garden. The perimeter of Jack's flower garden is 36 ft.





What is the difference between the perimeter of the vegetable garden and the perimeter of the flower garden?

B. At the carnival, Ryan spent \$9 on games and \$7 on rides. If Ryan brought a \$20 bill to the carnival, how much money did he have left?

C. Sally sold bracelets for 2 days. On the first day, Sally made \$64. On the second day, she made \$98. How much money did Sally make selling bracelets?

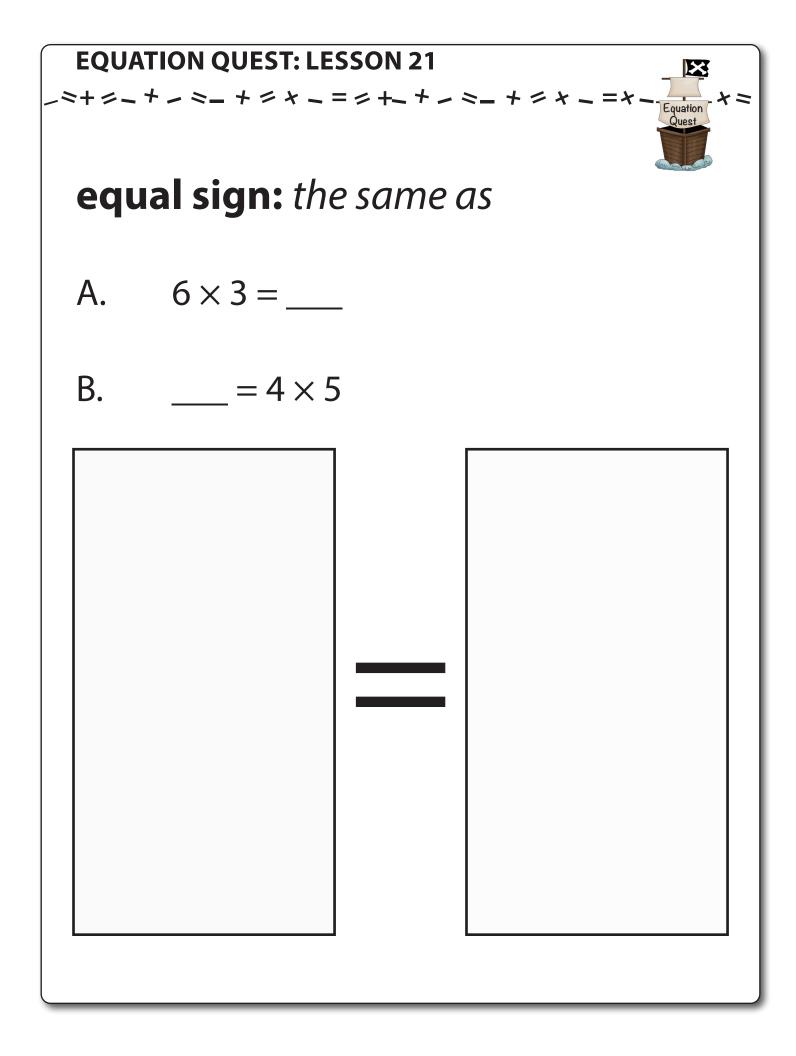
	JOLLY ROGER REVIEW: LESSON 20
Write the Total Equation.	
Write the Difference Equation).
Write the Change Equation.	
Write the Total and Difference (combined amount is greater	•
Write the Total and Difference (combined amount is less).	equation



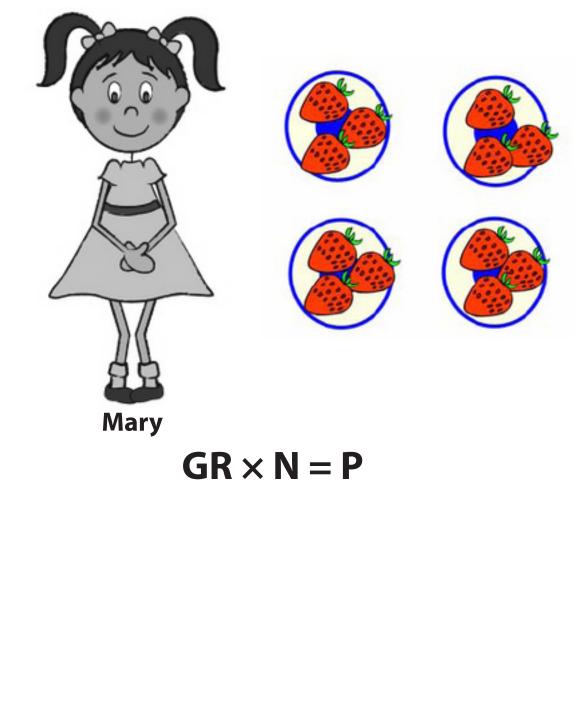
The table shows the number of each color rose the gardener planted last spring. How many more pink and white roses did the gardener plant than yellow roses?

Red roses	\$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$
Yellow roses	
White roses	
Pink roses	
()	

Each stands for 5 roses.

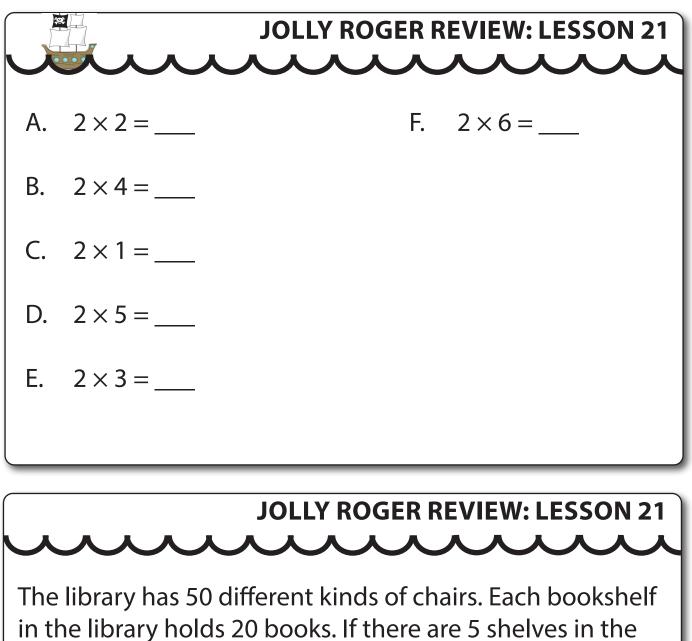


A. Mary has 4 bowls of strawberries. She has 3 strawberries in each bowl. How many strawberries does Mary have in all?

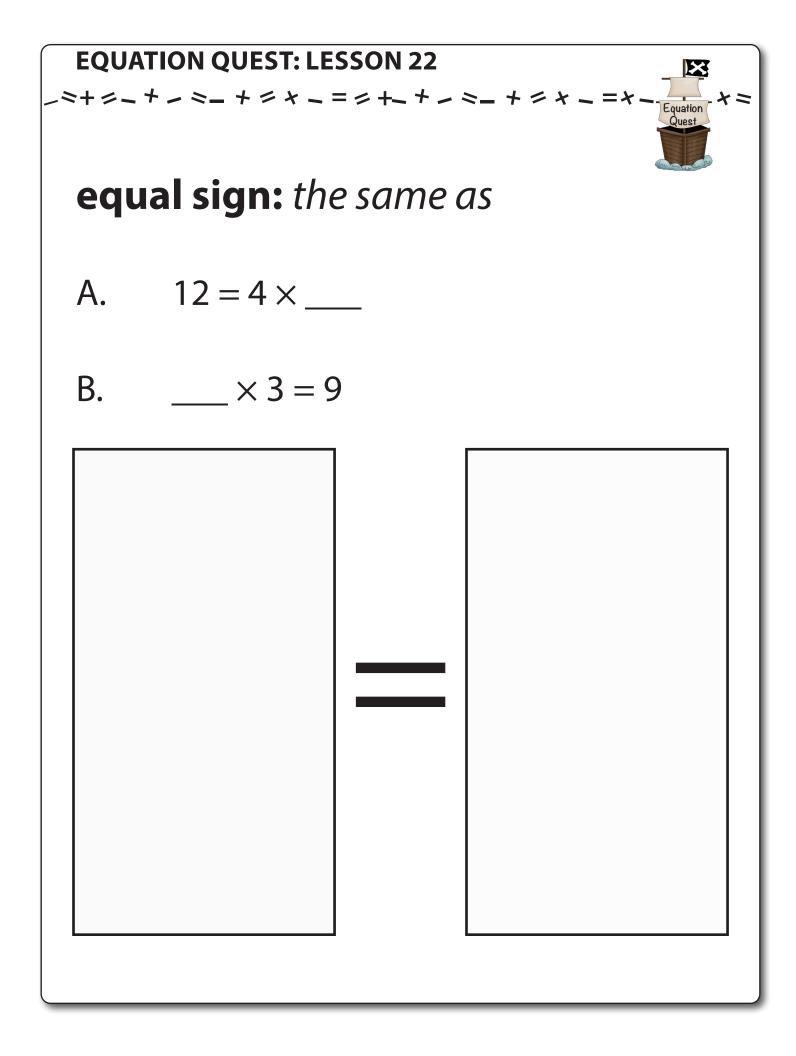


B. There are 8 teams in a soccer league. There are 11 players on each team. Each team has 3 coaches. How many players are in the soccer league?

C. Vera went to the grocery store. She bought 6 pounds of potatoes. Each pound of potatoes costs \$5.00. How much did Vera spend on potatoes?



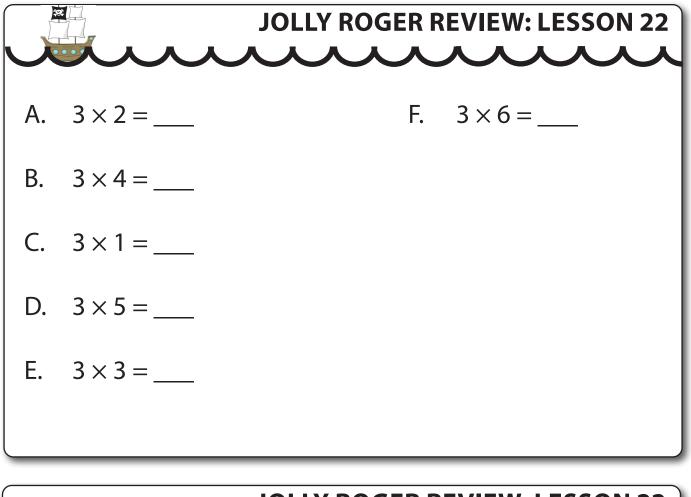
library, how many books are there?



A. The rectangular top of Dee's desk has a length of 8 inches and a width of 7 inches. What is the area of the top of Dee's desk in square inches?

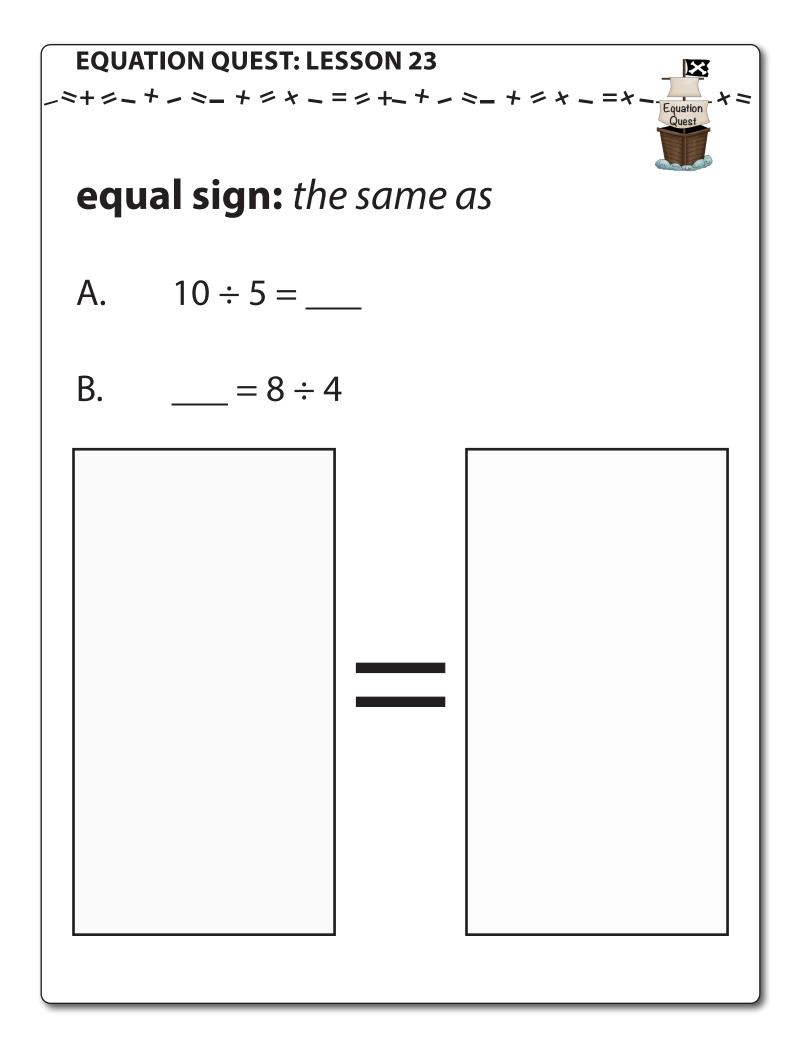
B. A classroom has 6 rows of chairs with 11 chairs in each row. How many chairs are in the classroom?

C. Mr. Munoz packs 6 boxes with limes. Each box holds 100 limes. How many limes did Mr. Munoz pack into these boxes?

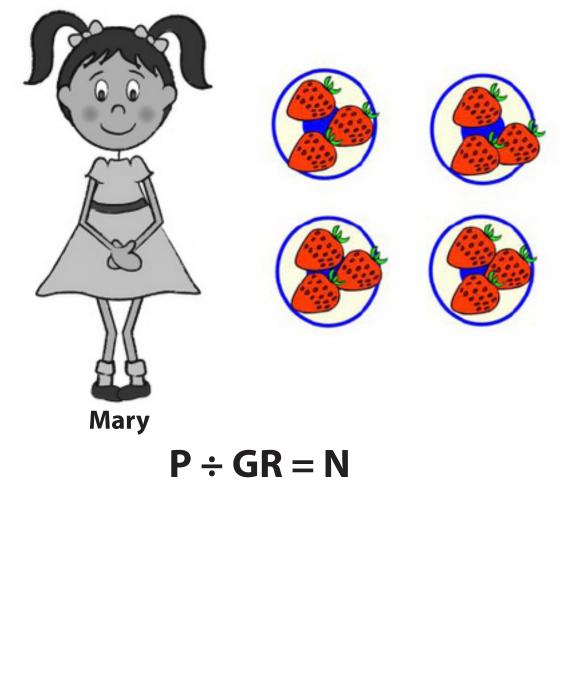


JOLLY ROGER REVIEW: LESSON 22

Meg had a deck of 52 cards. Then, her sister gave her 12 more. She lost 8 cards on her walk home. How many cards does Meg have now?

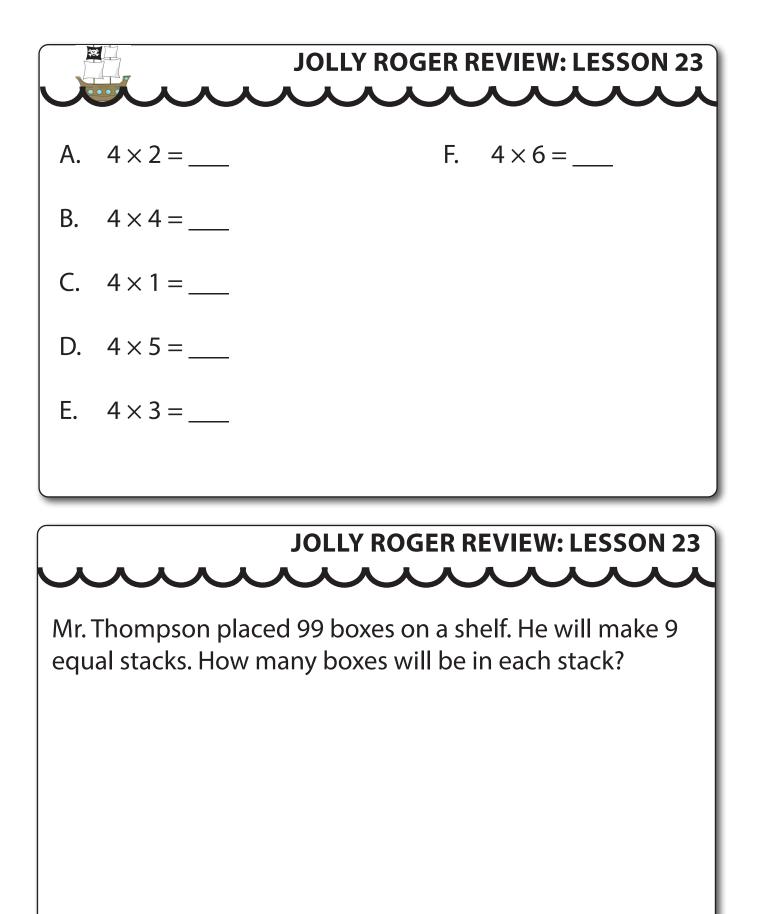


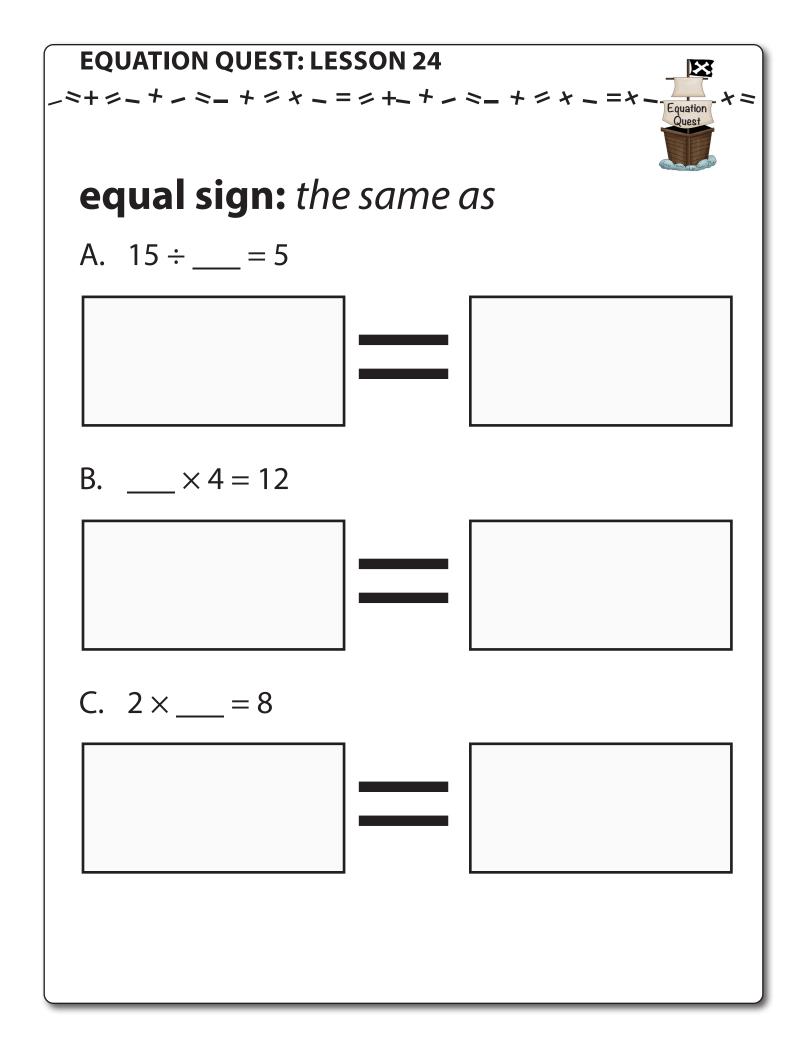
A. Mary has 12 strawberries. She wants to put the same number of strawberries into 4 bowls. How many strawberries will be in each bowl?



B. Ms. Losoya has 72 Starbursts. She will arrange the Starbursts in 6 equal stacks. How many Starbursts will be in each stack?

C. In math class, 5 students split up 60 flashcards to practice their math facts. Each student took the same number of flashcards. How many flashcards did each student take?

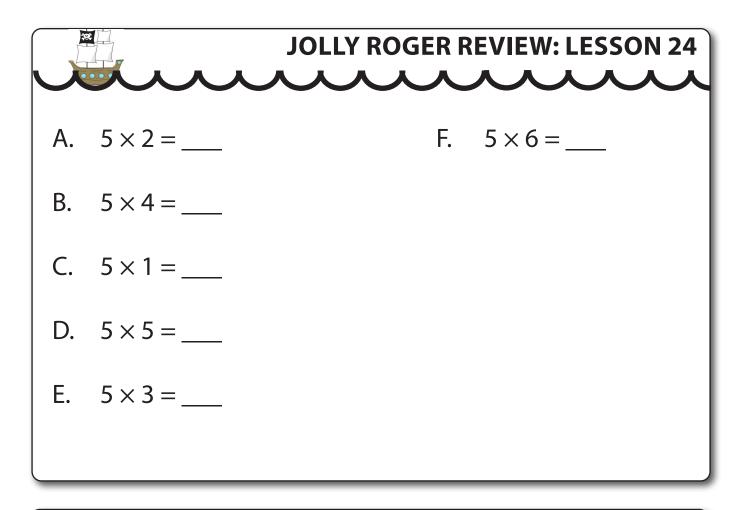




A. Scott has 28 toy cars to put on 4 shelves. He wants to put the same number of cars on each shelf. How many toy cars should Scott put on each shelf?

B. Members of a gym used 45 towels in 5 days. They used 88 water bottles. If the members used the same number of towels each day, how many towels did they use each day? C. Mr. Whitmore will deliver a total of 63 cases of water to 7 different grocery stores today. He will deliver the same number of cases of water to each grocery store.

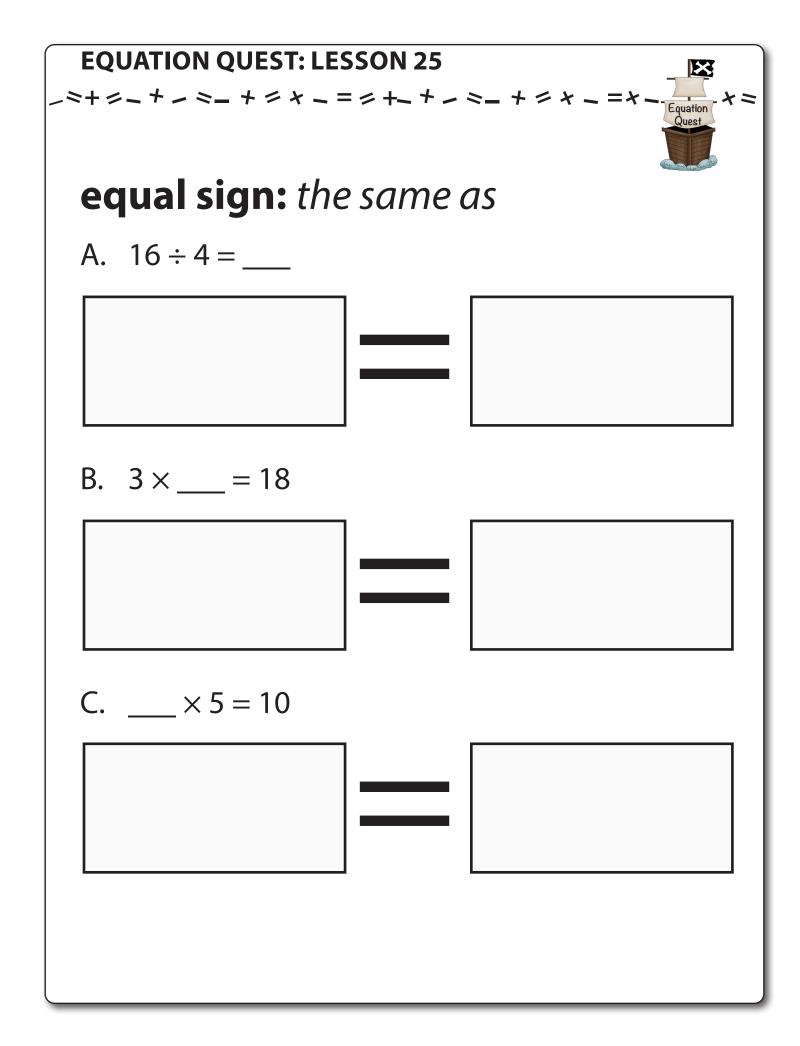
How many cases of water will Mr. Whitmore deliver to each grocery store?

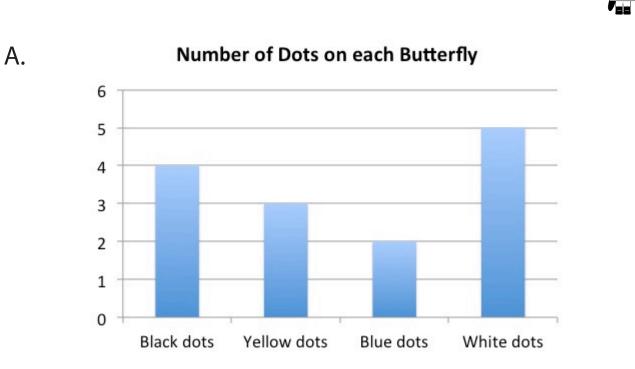


JOLLY ROGER REVIEW: LESSON 24

The table below shows the money each school raised at a fundraiser. 100 students at Mathews raised all of the money. If each Mathews student raised the same amount, how much money did each Mathews student raise?

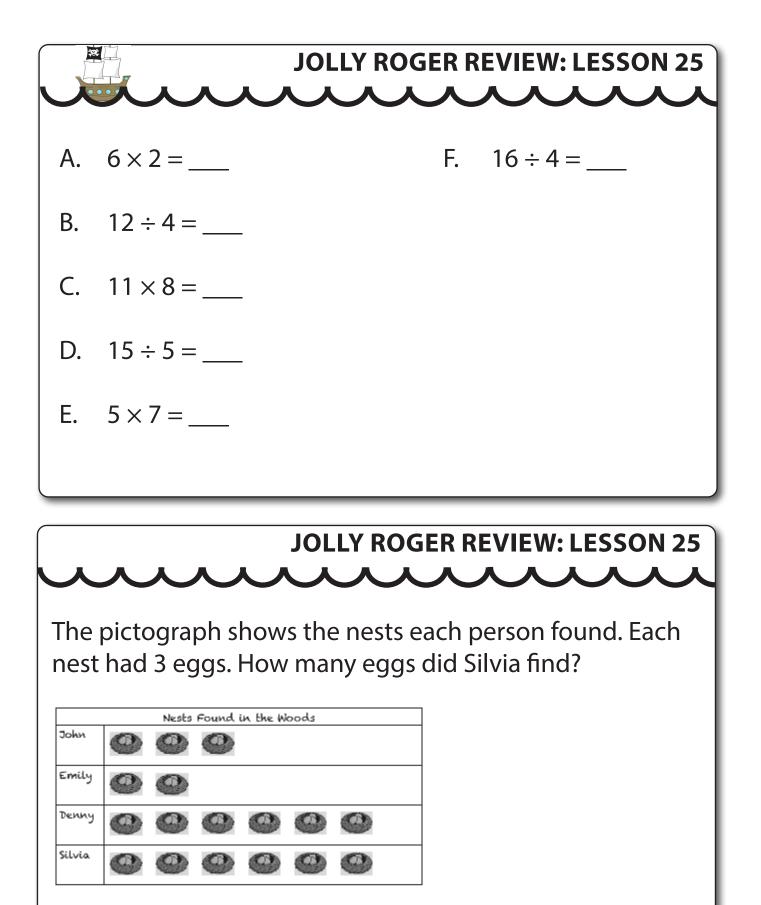
Fundraiser Sales		
School	Money Raised	
Davis	\$200	
Mathews	\$1,000	
Walnut Creek	\$500	
Wooldridge	\$750	

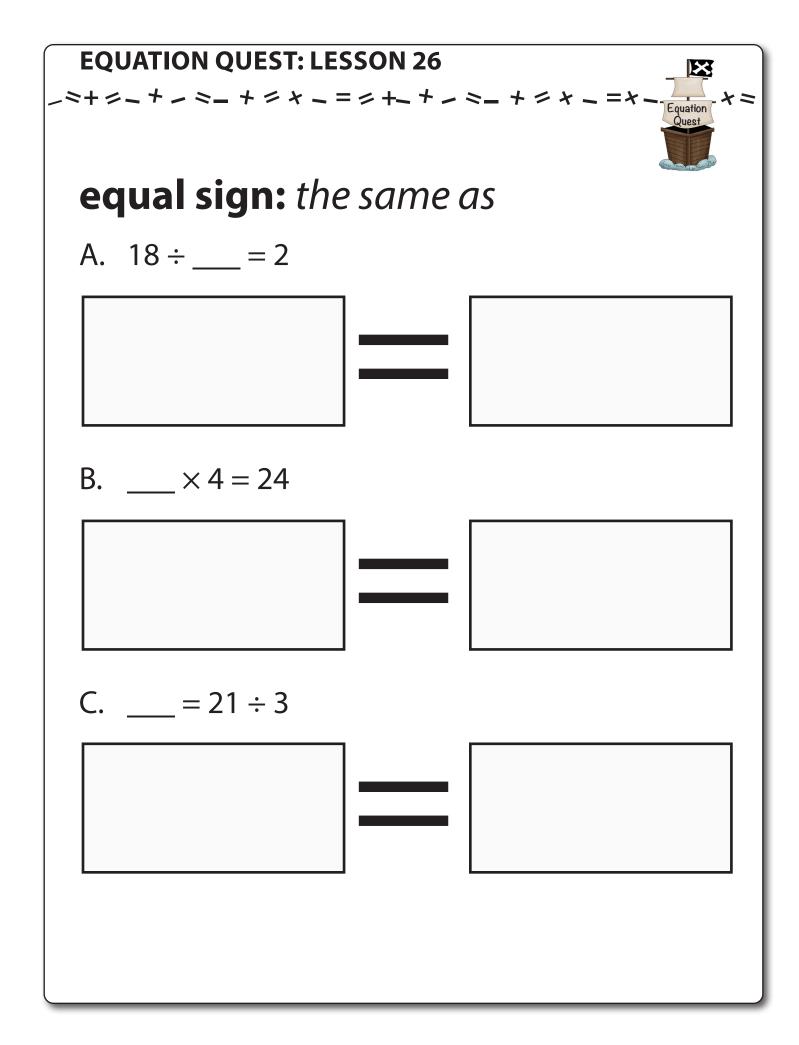




The graph above shows the number of dots on each butterfly. If there are 7 butterflies, how many blue dots are there in all? B. A science teacher put 56 marbles into 8 cups. He put the same number of marbles into each cup. How many marbles did the science teacher put into each cup?

C. Juliet's picture frame has a length of 25 cm and a width of 4 cm. What is the area of the picture frame in square centimeters?





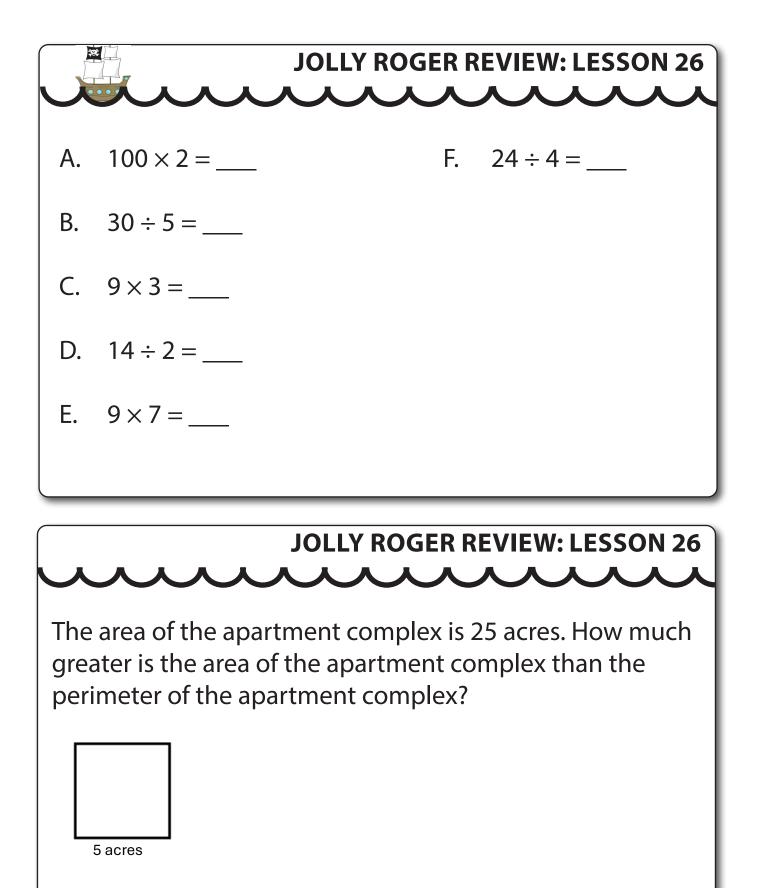
A. The pumpkin patch has a total of 54 pumpkins in 6 different rows. The same number of pumpkins are in each row. How many pumpkins are in each row?

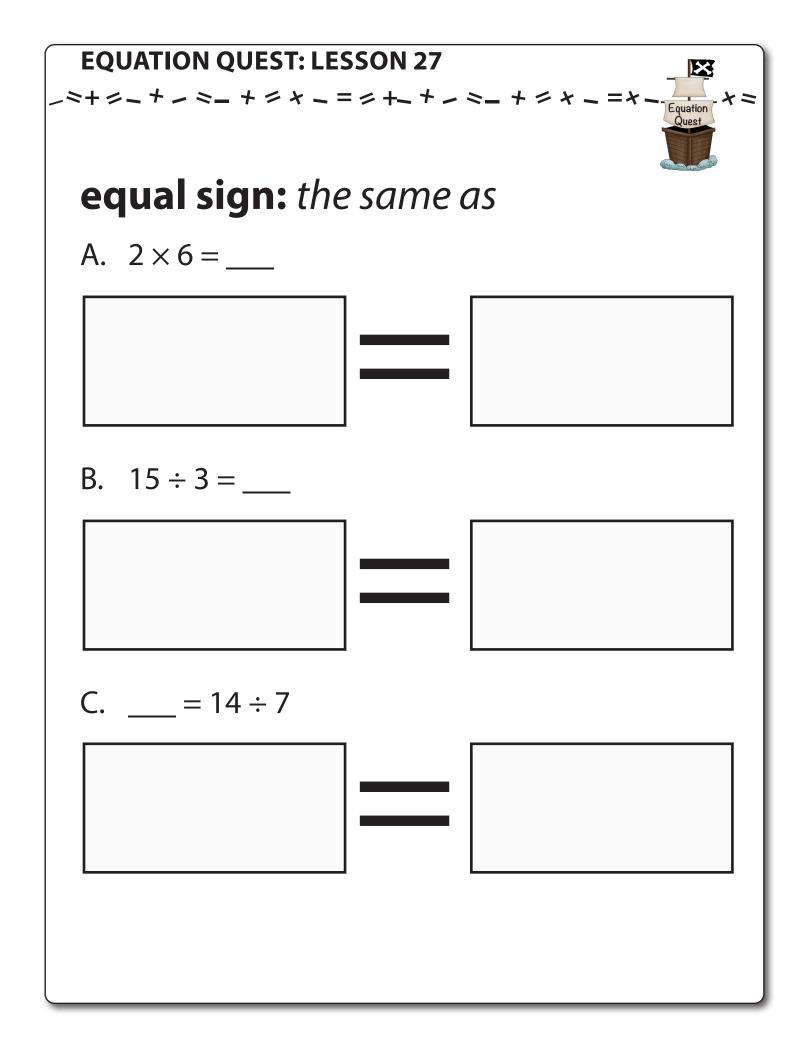
B. Hannah baked 12 cakes for each of her 4 friends. How many cakes did she bake in all?

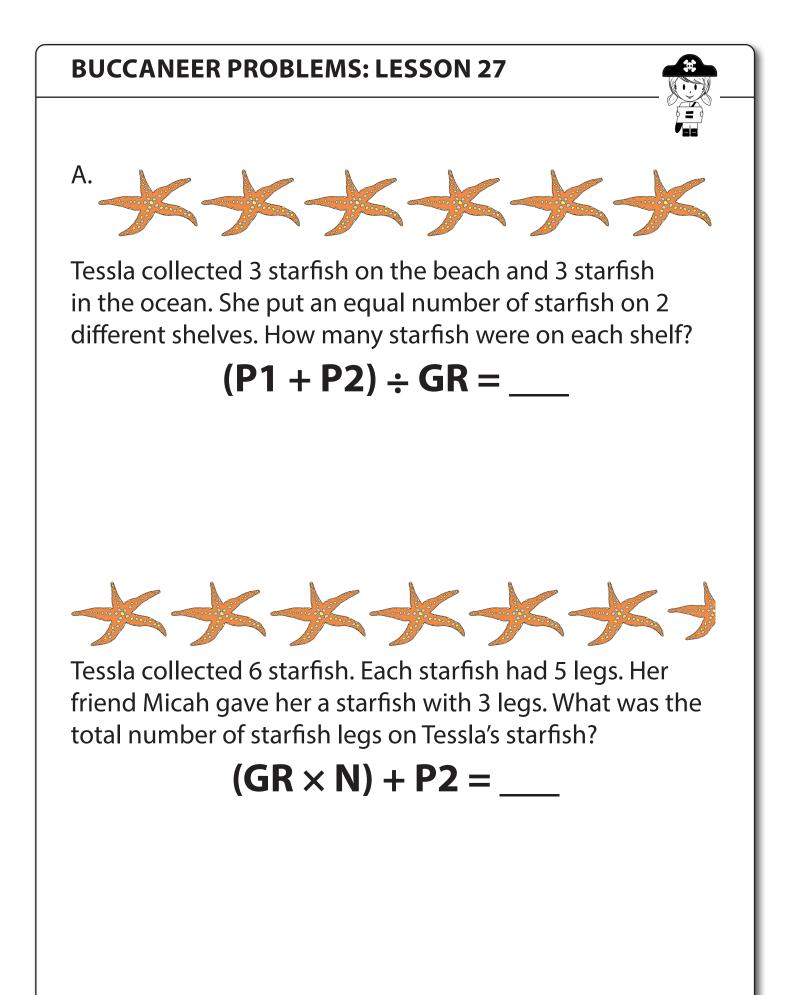
C. The table shows how much money each person spent at the coffee shop over 5 days.

Truman	\$32
Lincoln	\$40
Jackson	\$58
Carter	\$13

If Lincoln spent the same amount of money each day, how much money did he spend each day?







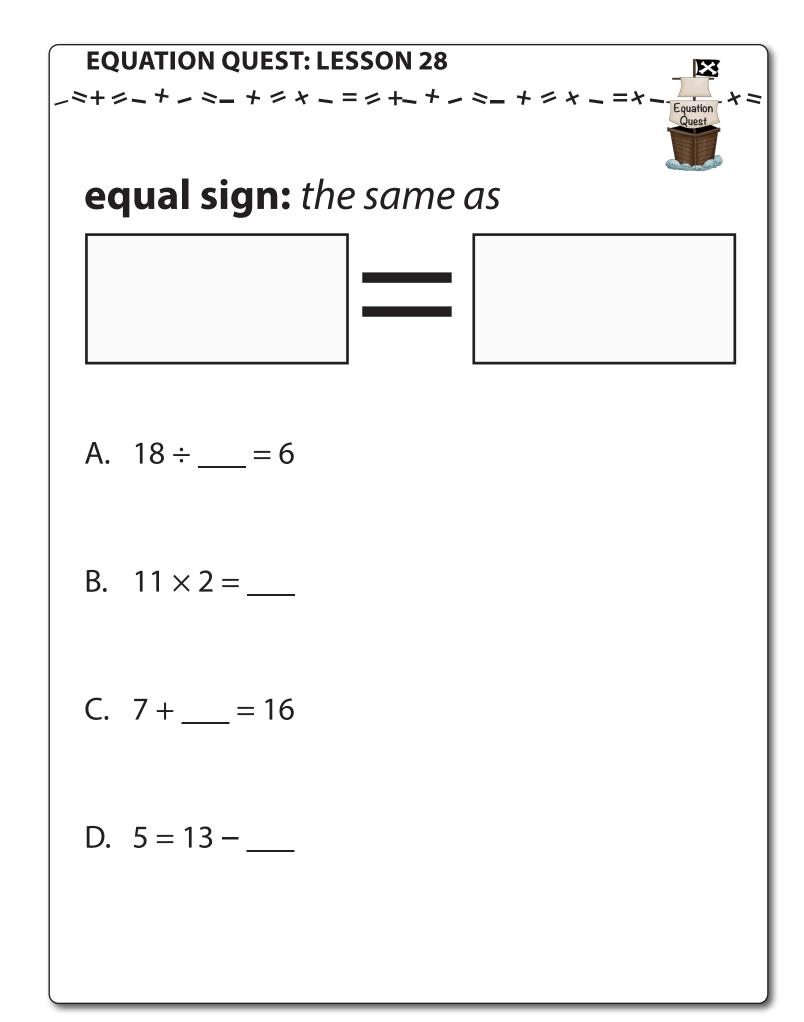
B. Jordan's mom had 6 cups of chocolate cereal and 6 cups of granola cereal in a box. His mom poured an equal amount of cereal into 2 different bowls. How many cups of cereal were in each bowl?

C. A construction company earned \$20 for one job and \$70 for a second job. The money was divided equally among the 3 workers. How much did each worker receive?

ROGER REVIEW: LESSON 27



A baker made 9 cakes on Monday and 9 cakes on Tuesday. He shared the cakes evenly among 3 friends. How many cakes did each friend receive?





A. The haunted house has 3 ghosts in each of the 5 upstairs rooms of the house. If 19 ghosts live downstairs, how many ghosts are in the haunted house?

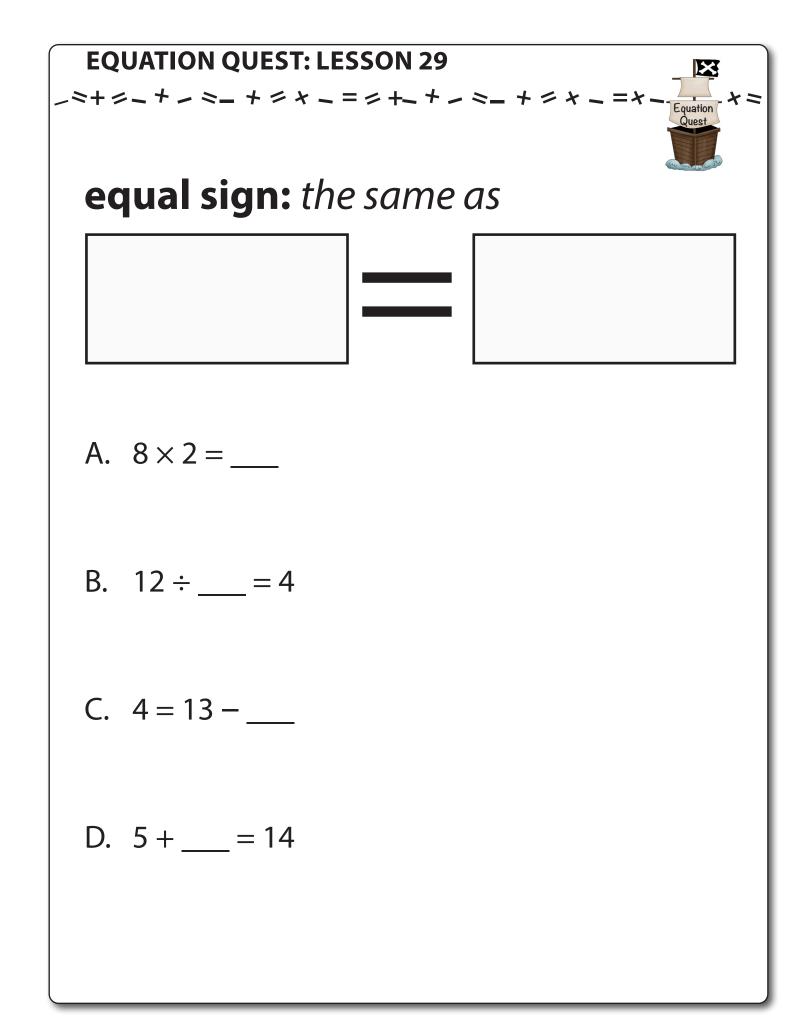
B. Darren bought 5 pizzas that were \$10 each. He also bought breadsticks for \$9. What was the total amount Darren paid for the pizzas and breadsticks? C. Valentina arranged 2 boxes of mirrors on her store shelves. Each box contained 11 mirrors. She also arranged 5 additional mirrors on the shelves.

How many mirrors did Valentina arrange?

JOLLY	ROGER REVIEW: LESSON 28
Write the Total and Difference equation (combined amount is greater).	
Write the Total and Difference equation (combined amount is less).	
Write the Total and Equal Groups equation (with a known product).	
Write the Total and Equal Groups equation (with a missing product).	



Marco bought 7 shirts that were \$6 each. He also bought a pair of pants for \$25. What was the total amount Marco paid for the shirts and pants?



A. Blair's mom had 8 bags of chocolate candies and 10 bags of sour candies. She divided an equal amount of candies into 2 different bags. How many candies were in each bag?

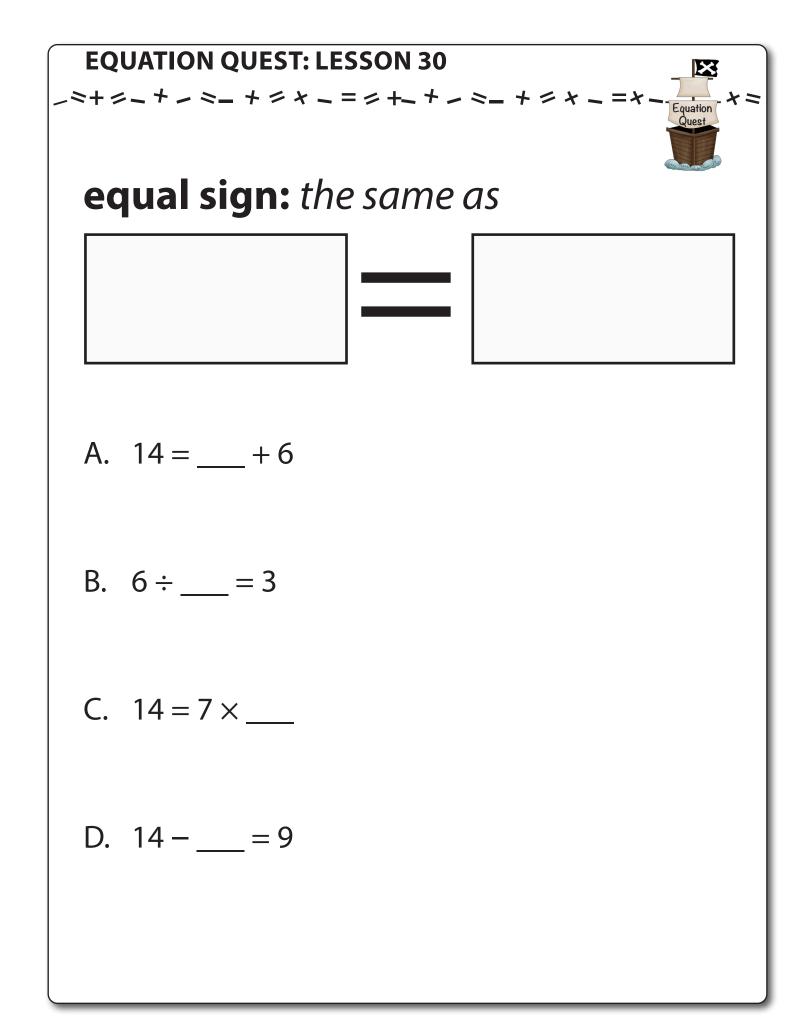
B. Rad planted 465 flowers in his garden. Joanne planted 328 flowers in her garden. Scott planted 99 flowers in his garden. How many fewer flowers did Joanne plant than Rad?

C. Maria sold 66 tulips and 25 daisies at her flower shop. She also sold 12 roses. How many more tulips and daisies did Maria sell than roses?

	m
Write the Total and Difference equation (combined amount is greater).	
Write the Total and Difference equation (combined amount is less).	
Write the Total and Equal Groups equation (with a known product).	
Write the Total and Equal Groups equation (with a missing product).	



Danielle unpacked 3 boxes of diapers. Each box contained 12 diapers. She also received 15 additional diapers from her mom. How many diapers does Danielle have?





Luis bought 4 bags of lemons. Each bag contained 2 lemons. If each lemon had 2 seeds, how many seeds were there in all?

$(GR \times N) \times N =$ _____

Luis bought 4 bags of lemons. Each bag contained 2 lemons. He put an equal number of lemons into 2 bowls. How many lemons were in each bowl?

(GR x N) ÷ GR = _____

Luis bought 8 lemons. He keeps an equal number of lemons in 2 bowls. Each bowl has half as many limes as lemons. How many limes are in each bowl?

$(P \div GR) \div GR = _$

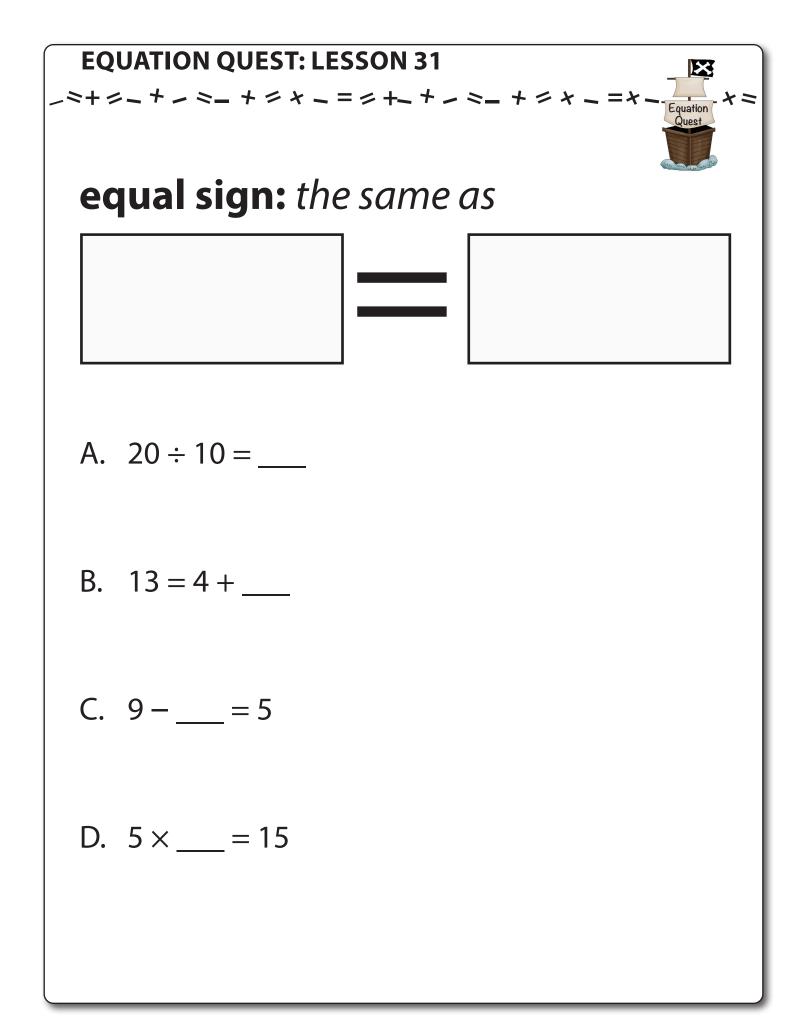
B. Alexa drank 3 glasses of water every day for 3 days. Each glass contained 12 fl oz of water. What is the total amount of water in fluid ounces that Alexa drank?

C. There are 5 ounces of soda in a can. There are 10 cans of soda in a case. How many ounces of soda are in 3 cases?

JOLLY ROGER REVIEW: LESSON 30	
Write the Total and Difference equation (combined amount is greater).	
Write the Total and Difference equation (combined amount is less).	
Write the Total and Equal Groups equation (with a known product).	
Write the Total and Equal Groups equation (with a missing product).	
Write the Equal Groups and Equal Groups equation (missing product two times).	



Landyn had 6 chicken coops in her back yard. Each coop had 5 chickens. If each chicken laid 3 eggs, how many eggs were there in all?



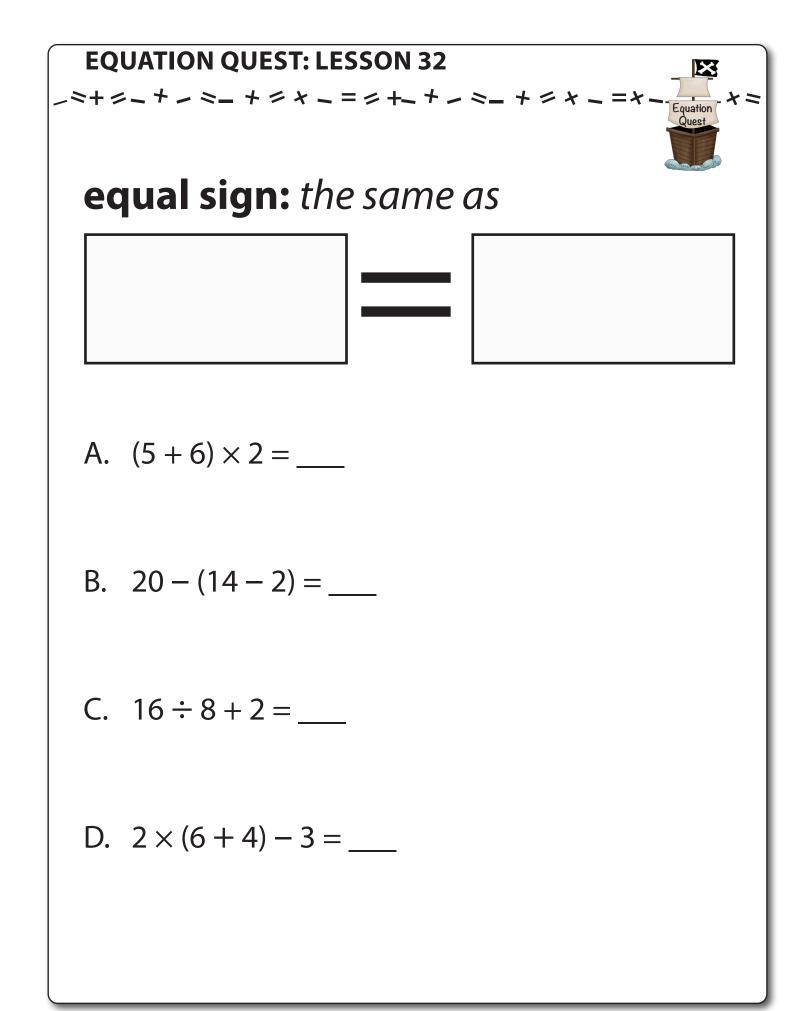


A. The coaches bought 2 cases of sports drinks for field day. Each case contained 12 sports drinks. If 8 students received sports drinks, how many drinks did each student receive?

B. Ms. Levine bought 10 bags of candies. Each bag contained 8 candies. She put an equal number of candies into 2 jars. How many candies did she put into each jar? C. Lucy will make 10 equal stacks of shirts. Each stack will have 3 shirts. If Lucy has 5 drawers and she wants to put the same number of shirts in each drawer, how many shirts should she put in each drawer?



Mrs. Hemple bought 6 bags of jelly beans. Each bag contained 10 jelly beans. She gave an equal number of jelly beans to 20 students. How many jelly beans did each student receive?



A. The party store has a total of 300 pieces of candy. The candies are split evenly into 10 piñatas. Each piñata has 5 bags. If each bag has the same number of candies, how many candies are in each bag?

B. Jenn has 50 marbles. She keeps an equal number of marbles in 5 bags. Each bag has half as many rocks as marbles. How many rocks are in each bag?

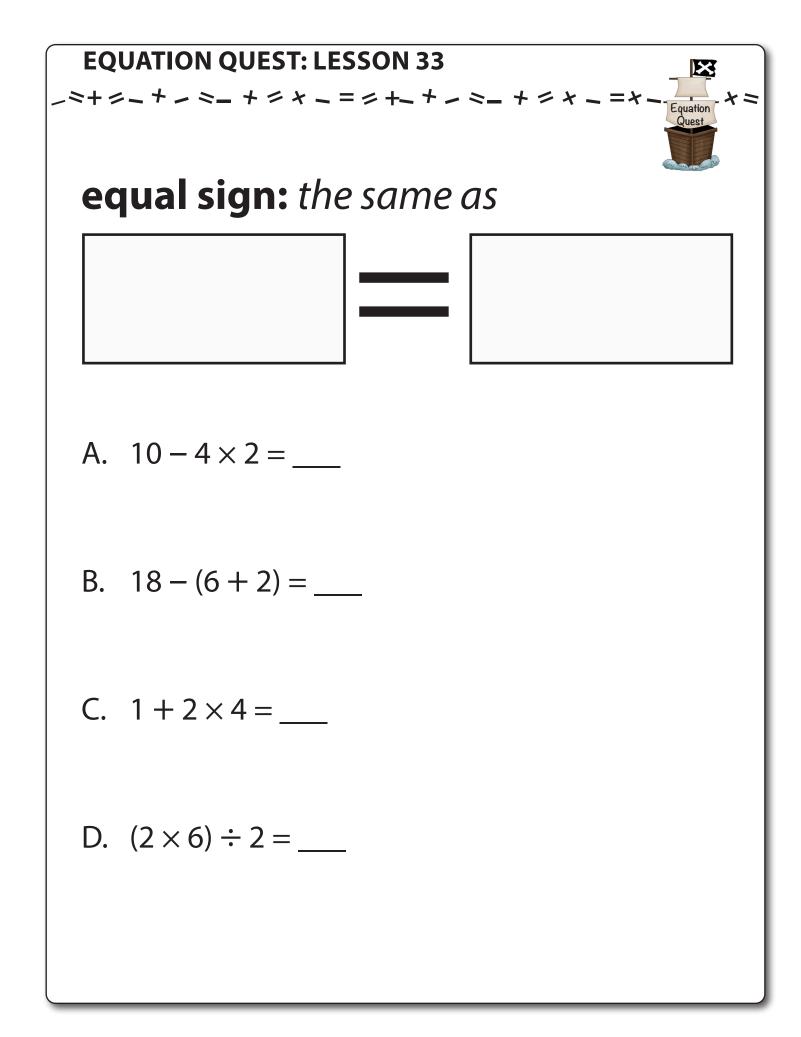
C. There are a total of 36 polar bears at the North Pole. An equal number of polar bears live on 3 different icebergs. Half of the bears on each iceberg are female.

How many female polar bears are on each iceberg?

JOLLY ROGER REVIEW: LESSON 3	

JOLLY ROGER REVIEW: LESSON 32

Chrissy bought 40 chocolate pies at the bakery. She ate half of the pies last week. Chrissy will eat the remaining pies this week. If she eats the same number of pies each day, how many pies will she eat during each of the next 5 days?





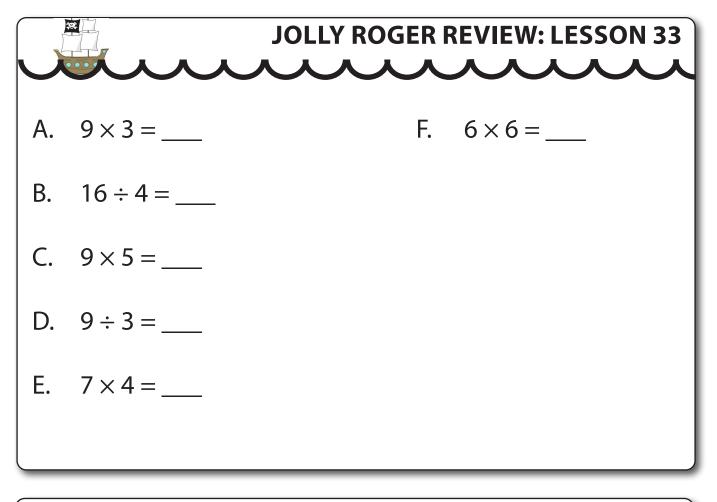
A. The temperature was 63 degrees in the fall and 45 degrees in the winter. In the summer, it was 103 degrees.

What was the difference between the combined temperature in the fall and winter and the temperature in the summer?

B. There are 12 eggs in a carton. There are 5 cartons in a box. How many eggs are in 2 boxes?

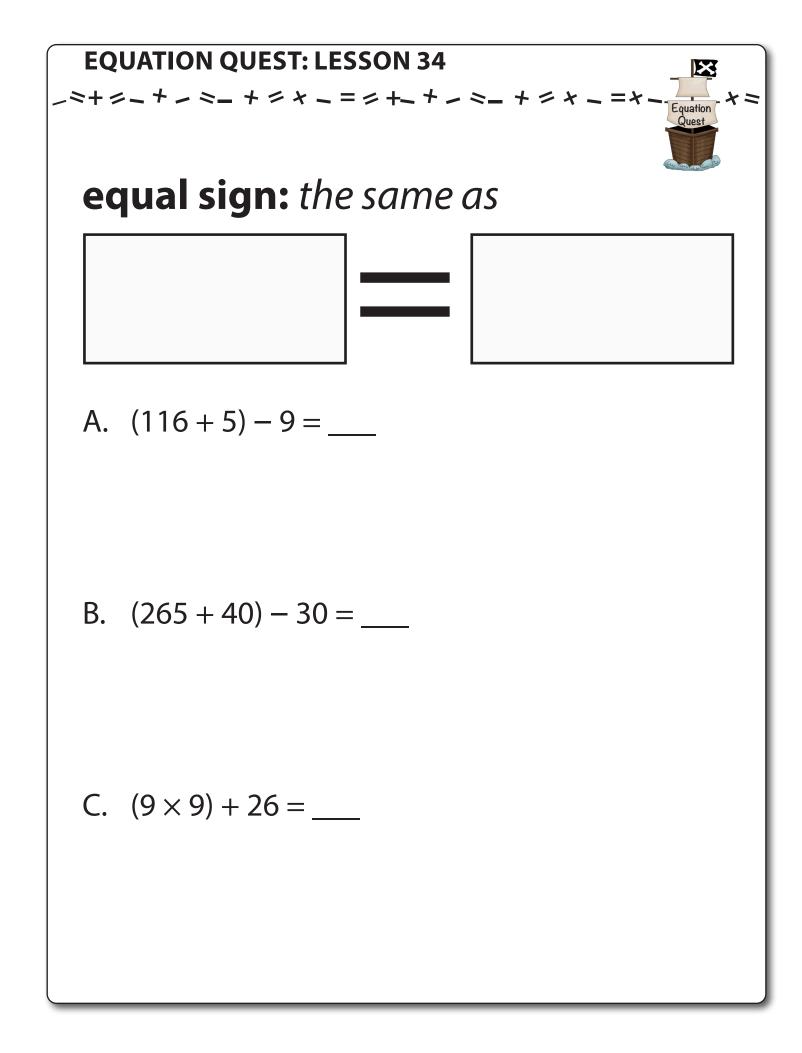
C. Daria has 42 baseball gloves and 7 baseball bats. She will put her items on 7 shelves. She will put the same number of items on each shelf.

How many items will Daria put on each shelf?



JOLLY ROGER REVIEW: LESSON 33

A clothing company earned \$200 in one week and \$300 in the second week. The money was divided equally among the 5 employees. How much money did each employee receive?

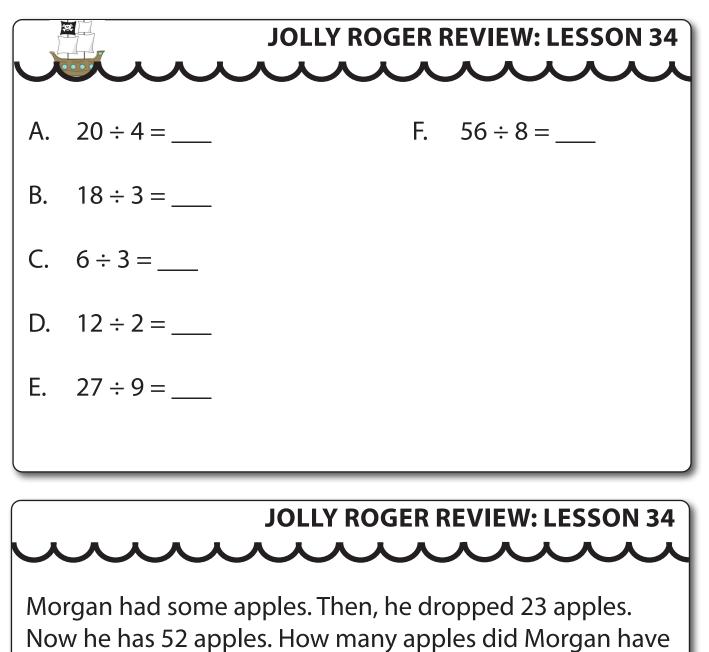




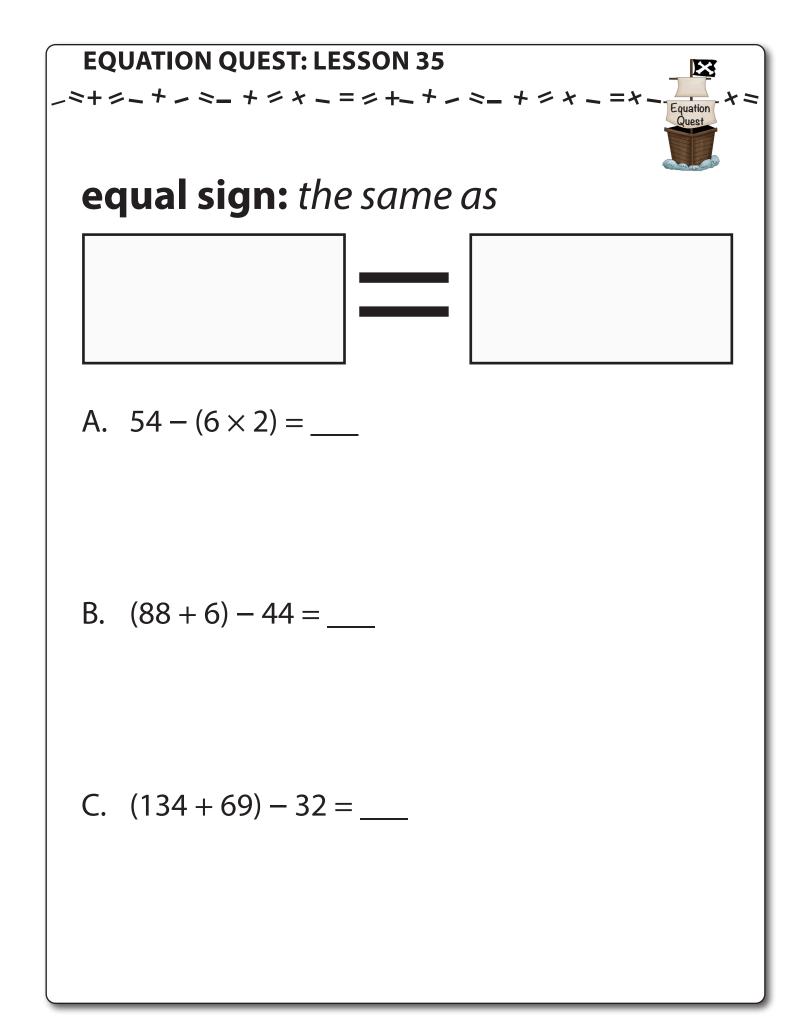
A. The farmer has 9 cow pastures. There are 9 cows in each pasture. In the spring, he bought 38 more cows. How many cows does the farmer have now?

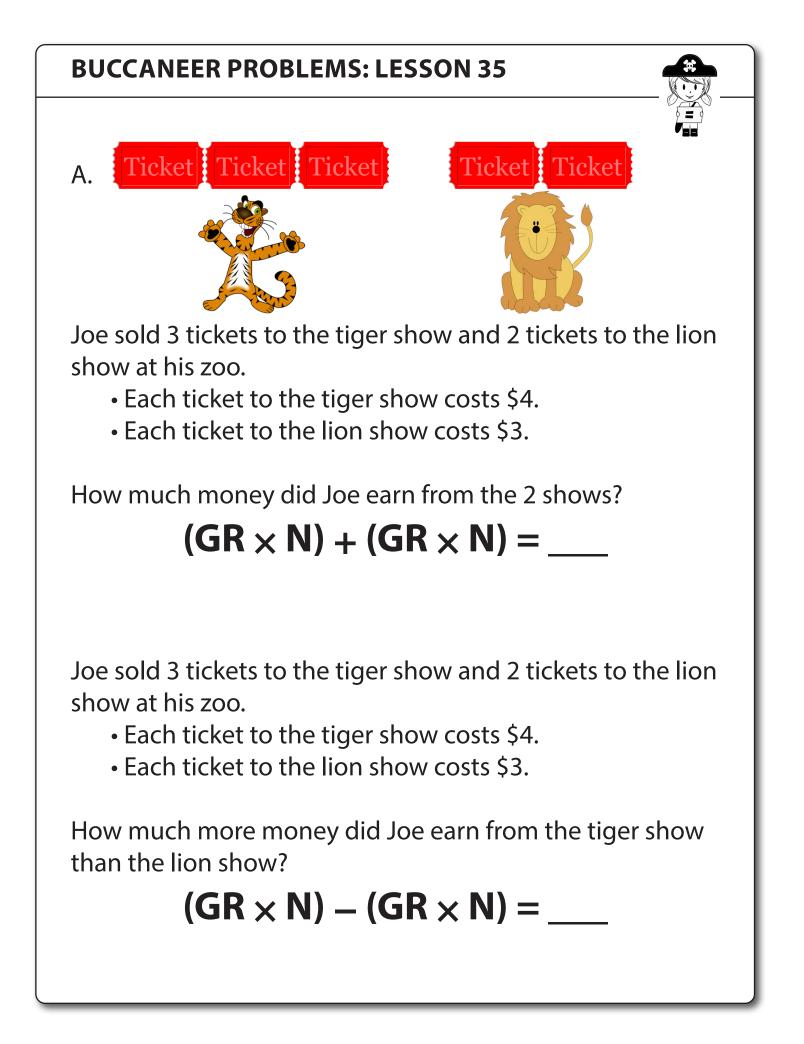
B. A singer wrote 8 songs each day for 5 days. He played the same number of songs at 4 different shows. How many songs did he play at each show? C. At the basketball game, Tabitha spent \$12.00 on snacks and \$22.00 on a t-shirt.

If Tabitha brought a \$50.00 bill to the game, how much change did she receive?



to start?





B. Kate bought 3 purple necklaces and 4 blue necklaces.

- Each purple necklace costs \$5.
- Each blue necklace costs \$6.

How much money did Kate spend?

C. Ms. Powell orders t-shirts for the 10 students in her class.

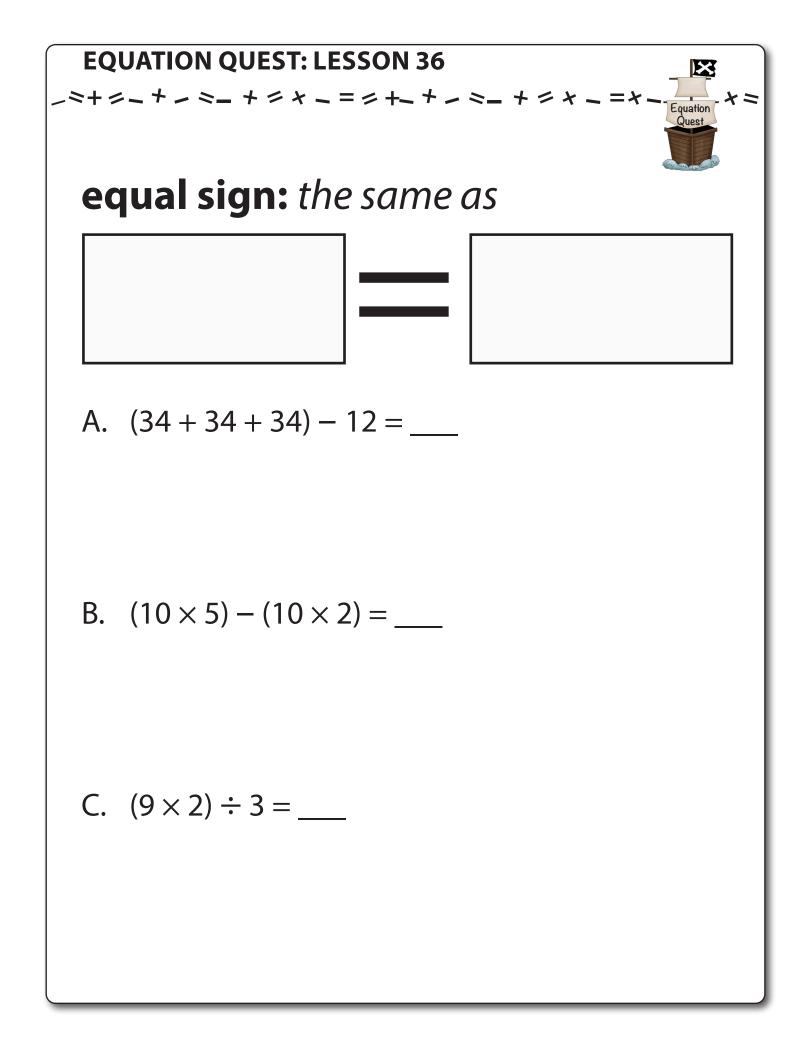
- Tie-Dye t-shirts cost \$5 each.
- White t-shirts cost \$2 each.

How much more will it cost Ms. Powell to buy tie-dye t-shirts than white t-shirts for all of her students?

JOLLY	ROGER REVIEW: LESSON 35
	m
Write the Total and Difference equation (combined amount is greater).	
Write the Total and Difference equation (combined amount is less).	
Write the Total and Equal Groups equation (with a known product).	
Write the Total and Equal Groups equation (with a missing product).	
Write the Equal Groups and Equal Groups equation (missing product two times).	
Write the Equal Groups and Equal Groups equation (missing product, known product).	
Write the Equal Groups and Equal Groups equation (known product two times).	
Write the Equal Groups, Equal Groups, and Total Equation.	
Write the Equal Groups, Equal Groups, and Difference Equation.	

JOLLY ROGER REVIEW: LESSON 35

Adam's first bulletin board has a length of 12 inches and a width of 9 inches. His second bulletin board has a length of 11 inches and a width of 5 inches. What is the difference between the areas of the two bulletin boards?



A. David wants to order 10 pizzas for a party.

- Pepperoni pizza costs \$12.
- Cheese pizza costs \$9.

How much less will it cost David to order all cheese pizzas than all pepperoni pizzas for the party?

B. Beau swam 55 laps on Saturday and Sunday. If she swam 26 laps on Saturday, how many laps did she swim on Sunday? C. There are 4 drinks in a carton. There are 2 cartons of drinks in a case. How many drinks are in 4 cases?

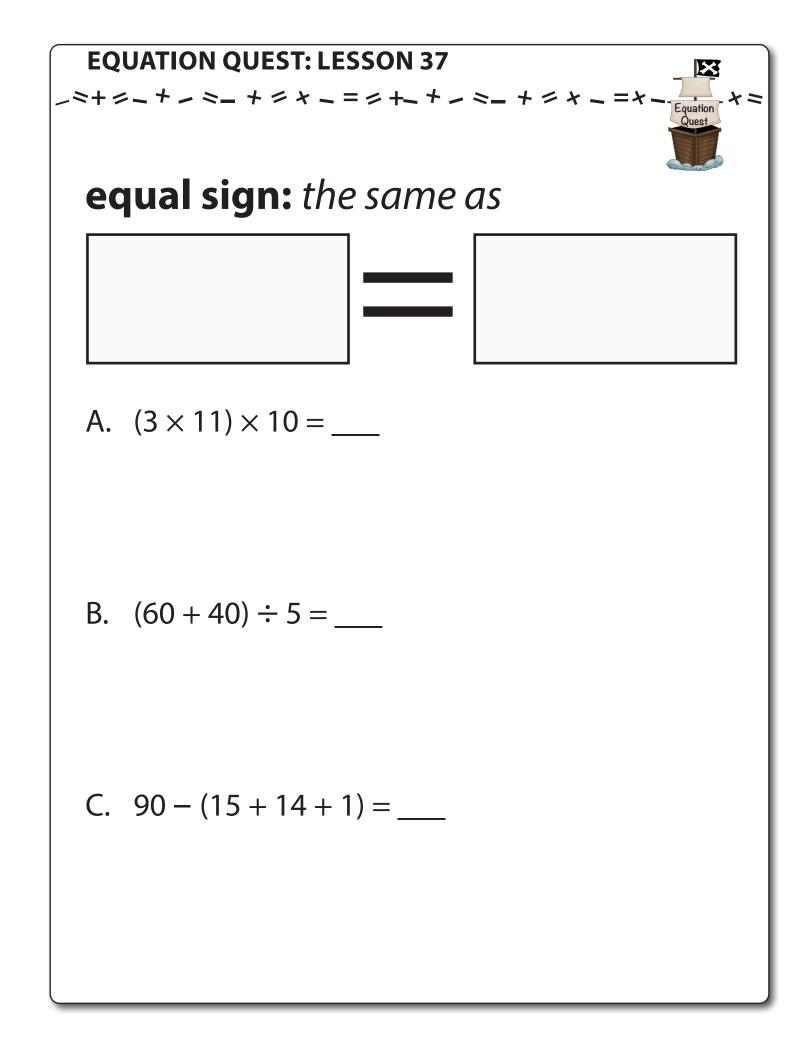
JOLLY	ROGER REVIEW: LESSON 36
Write the Total and Difference equation (combined amount is greater).	
Write the Total and Difference equation (combined amount is less).	
Write the Total and Equal Groups equation (with a known product).	
Write the Total and Equal Groups equation (with a missing product).	
Write the Equal Groups and Equal Groups equation (missing product two times).	
Write the Equal Groups and Equal Groups equation (missing product, known product).	
Write the Equal Groups and Equal Groups equation (known product two times).	
Write the Equal Groups, Equal Groups, and Total Equation.	
Write the Equal Groups, Equal Groups, and Difference Equation.	

JOLLY ROGER REVIEW: LESSON 36

Molly sold 11 Mexican meals and 9 Italian meals.

- She charged \$9.00 for each Mexican meal.
- She charged \$7.00 for each Italian meal.

How much more money did Molly make from Mexican meals than Italian meals?





A. Nathaniel had a total of 24 cans of soda. He drank half of the cans of soda last week. Nathaniel will drink the remaining cans of soda during the next 6 days.

If he drinks the same number of cans of soda each day, how many cans of soda will he drink each day?

B. Ellis has 60 playing cards. She wants to divide her playing cards equally among 3 friends. How many playing cards will each friend receive?

C. The table below shows the amount of money Rob earned for completing chores.

Rob's Chores		
Chore	Amount of Money	
	Earned	
Sweeping the garage	\$1.50	
Raking the yard	\$2.00	
Cleaning tools	\$4.50	
Washing the car	\$1.75	
Weeding the garden	\$11.00	

How much more money did Rob earn from sweeping the garage, washing the car, and weeding the garden than from cleaning tools?

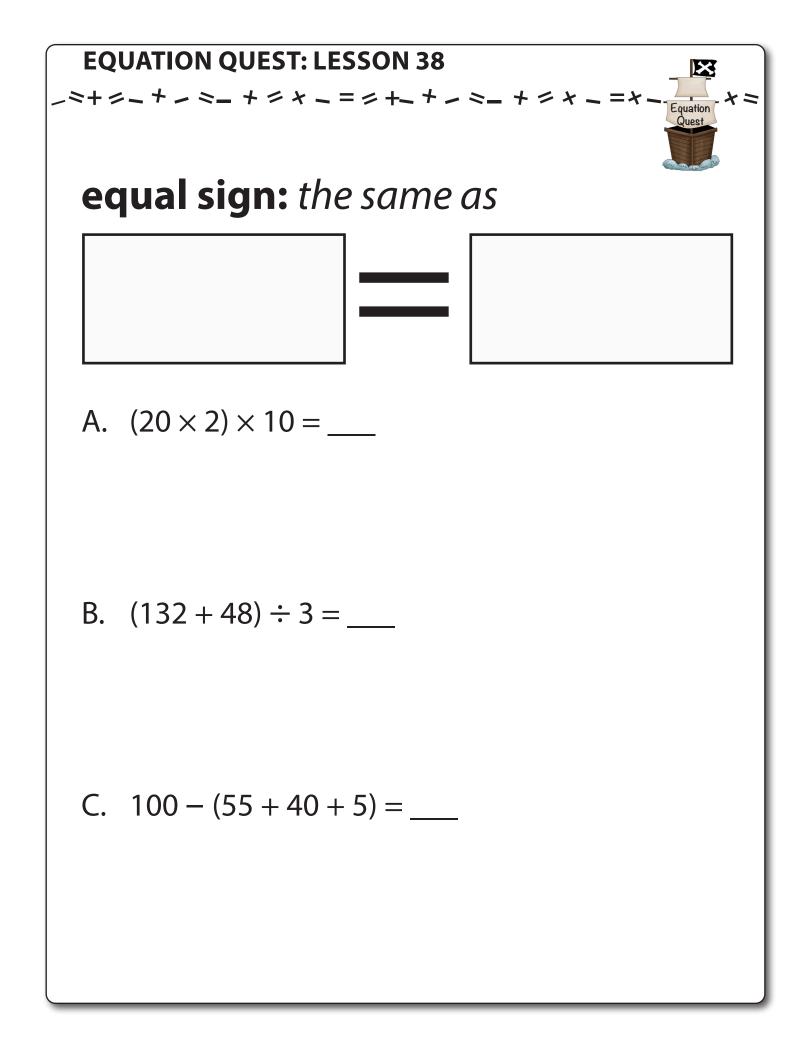
JOLLY	ROGER REVIEW: LESSON 37
Write the Total and Difference equation (combined amount is greater).	
Write the Total and Difference equation (combined amount is less).	
Write the Total and Equal Groups equation (with a known product).	
Write the Total and Equal Groups equation (with a missing product).	
Write the Equal Groups and Equal Groups equation (missing product two times).	
Write the Equal Groups and Equal Groups equation (missing product, known product).	
Write the Equal Groups and Equal Groups equation (known product two times).	
Write the Equal Groups, Equal Groups, and Total Equation.	
Write the Equal Groups, Equal Groups, and Difference Equation.	



Ms. Lopez built a fence around her house, shown below. Later, she expanded the fence so that the new perimeter was 150 meters. How much greater is the perimeter of the new fence than the old fence?

48 m

2 m



A. At the corner store, Nicole spent \$3.25 on hot cheetos and \$2.50 on a sports drink. If Nicole brought \$10.75 to the store, how much change did she receive?

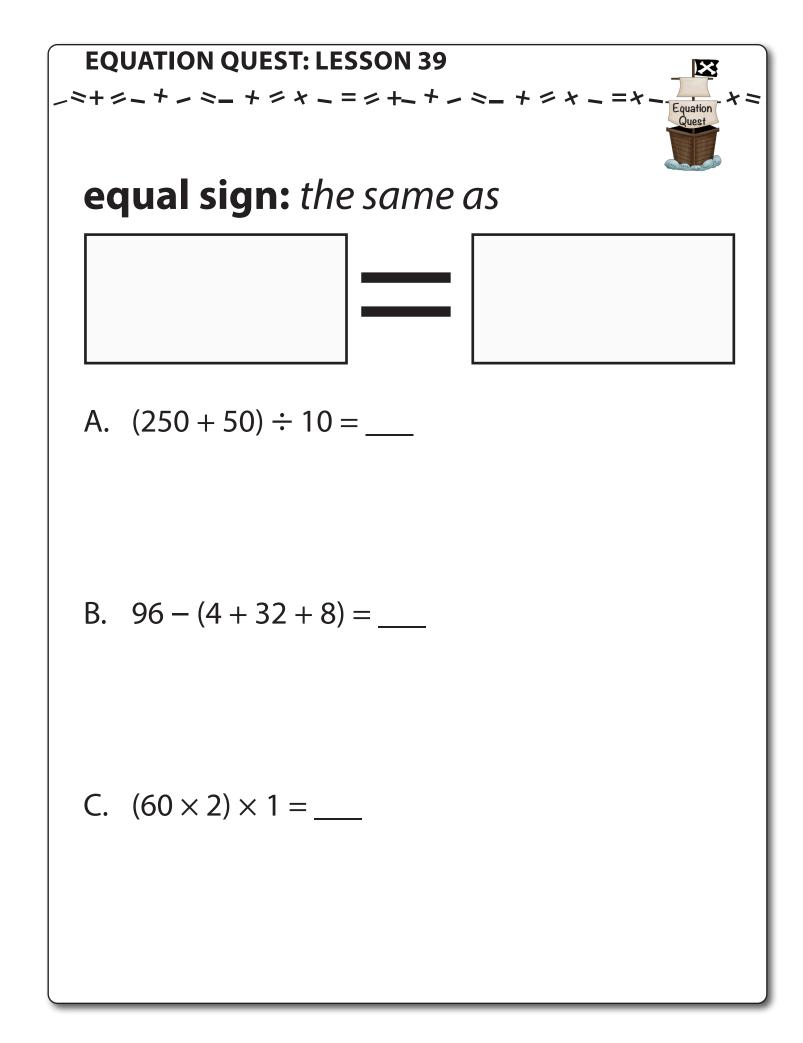
B. The blue ribbon is 124 cm long. The yellow ribbon is 98 cm long. What is the difference in the lengths of the two ribbons?

C. The ballerinas earned \$120 for their first performance and \$180 for their second performance. The money was divided equally among the 5 ballerinas. How much did each ballerina receive?

JOLLY	ROGER REVIEW: LESSON 38
	m
Write the Total and Difference equation (combined amount is greater).	
Write the Total and Difference equation (combined amount is less).	
Write the Total and Equal Groups equation (with a known product).	
Write the Total and Equal Groups equation (with a missing product).	
Write the Equal Groups and Equal Groups equation (missing product two times).	
Write the Equal Groups and Equal Groups equation (missing product, known product).	
Write the Equal Groups and Equal Groups equation (known product two times).	
Write the Equal Groups, Equal Groups, and Total Equation.	
Write the Equal Groups, Equal Groups, and Difference Equation.	

JOLLY ROGER REVIEW: LESSON 38

Ashley had 81 pennies, and then some fell out of her pocket. Now, Ashley has 44 pennies. How many pennies did Ashley lose?



A. Le bought 35 beads for her necklace. She lost 9 beads in her car. Then, her friend gave her 22 more. How many beads does Le have now?

B. There are 6 large pillows and 5 small pillows on Sunya's bed.

- Each large pillow has 4 stripes.
- Each small pillow has 2 stripes.

How many stripes are there?

C. Mason bought 12 cookies that were \$4 each. He also bought a cake for \$18.50. What was the total amount Mason paid for the cookies and cake?

JOLLY	ROGER REVIEW: LESSON 39
Write the Total and Difference equation (combined amount is greater).	
Write the Total and Difference equation (combined amount is less).	
Write the Total and Equal Groups equation (with a known product).	
Write the Total and Equal Groups equation (with a missing product).	
Write the Equal Groups and Equal Groups equation (missing product two times).	
Write the Equal Groups and Equal Groups equation (missing product, known product).	
Write the Equal Groups and Equal Groups equation (known product two times).	
Write the Equal Groups, Equal Groups, and Total Equation.	
Write the Equal Groups, Equal Groups, and Difference Equation.	



The perimeter of Jude's triangle is 36 cm. The first side is 9 cm. The second side is 12 cm. What is the length of the third side?