

Name Answer Key

1

Use the digits 1, 2, and 3 so that you get the smallest answer.

a.
$$\begin{array}{r} \square \square \\ \times \square \\ \hline \end{array}$$

b.
$$\square \square \div \square =$$

ANSWER: a. 23 ; b. $12 \div 3 = 4$

$$\begin{array}{r} \times 1 \\ 23 \\ \hline \end{array}$$

COMMENTS & EXTENSIONS: Suppose the goal were to get the largest answer? What if you used the digits 1, 2, 3, and 4 to get the smallest product for $\square \square \times \square \square$? What if you wanted to get $\square \square \times \square \square$ to be divisible by 3?

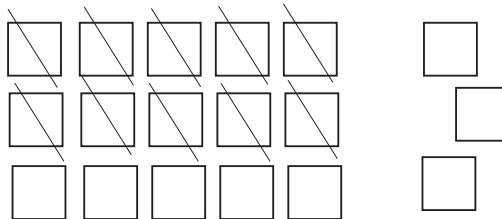


Try This

Evaluate: $15 - (2 \times 5) + 3$

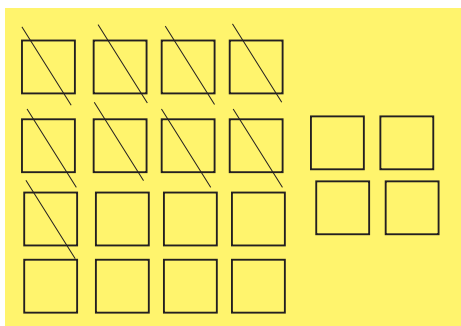
- Use Centimeter Cubes to model the problem.
- Draw your model.
- Write the answer.

Think: 15, take away (2×5) , add 3.

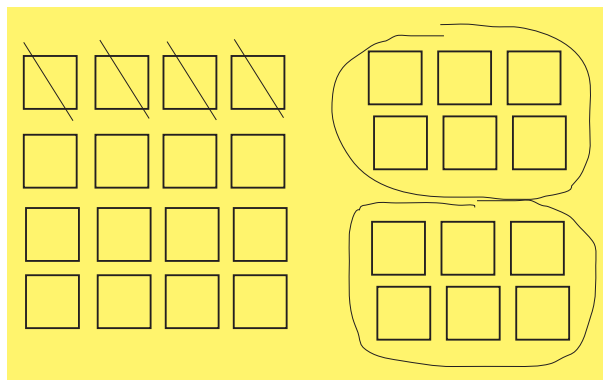


$$15 - (2 \times 5) + 3 = 8$$

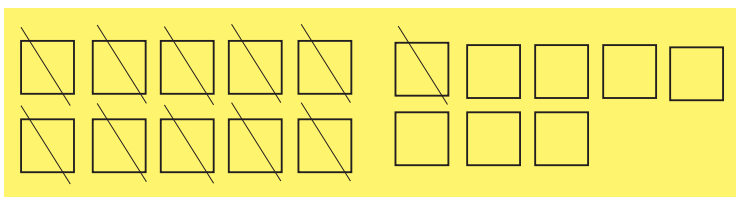
1. $16 - (27 \div 3) + 4 =$ 11



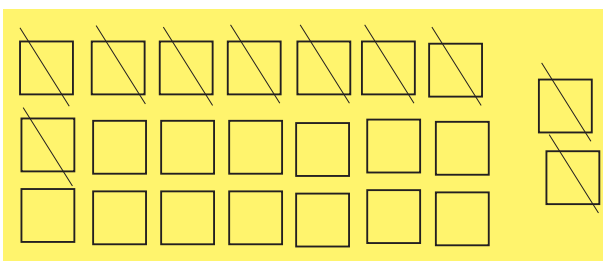
2. $(16 - 4) \div 2 =$ 6



3. $10 + (5 + 3) - 11 =$ 7

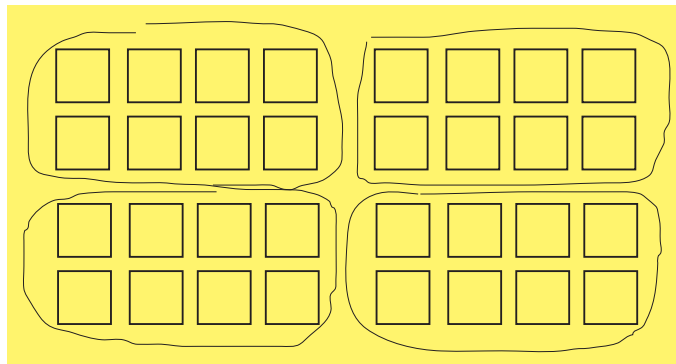


4. $(3 \times 7) + 2 - 10 =$ 13



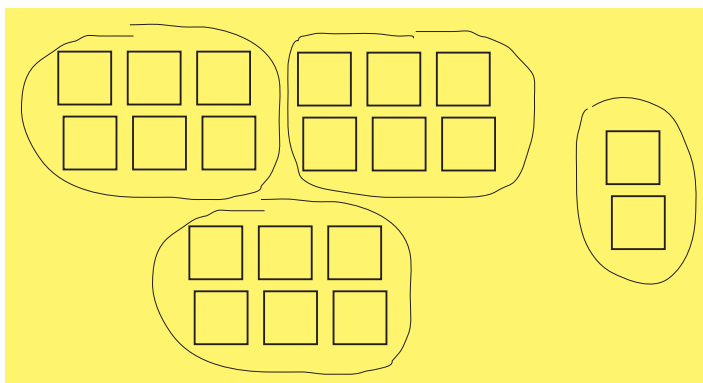
5. Jeffrey has 17 water balloons, and Jamal has 15 water balloons. They put the water balloons equally into 4 tubs. How many water balloons are in each tub?

Equation: $(17 + 15) \div 4 = 8$



6. Vijay, Alicia, and Jackie collected eggs in the henhouse. Vijay collected 8 eggs, Alicia collected 7 eggs, and Jackie collected 5 eggs. They put the eggs in cartons that hold 6 eggs each. How many cartons could they fill? Explain.

3; the 4th will only have 2 eggs.



Write a problem you can solve using the given equation. Sketch a model.
Write the answer to your problem.

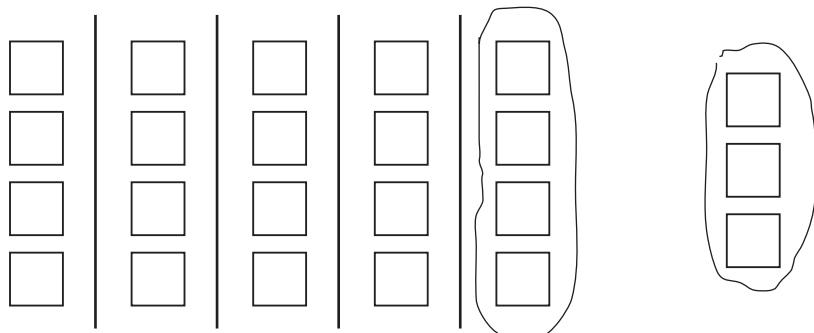
7. $(25 - 5) \div 10 = ?$

Problems and sketches will vary. Answer is 2.

Use Centimeter Cubes to build the model. Use the model to complete the problem.

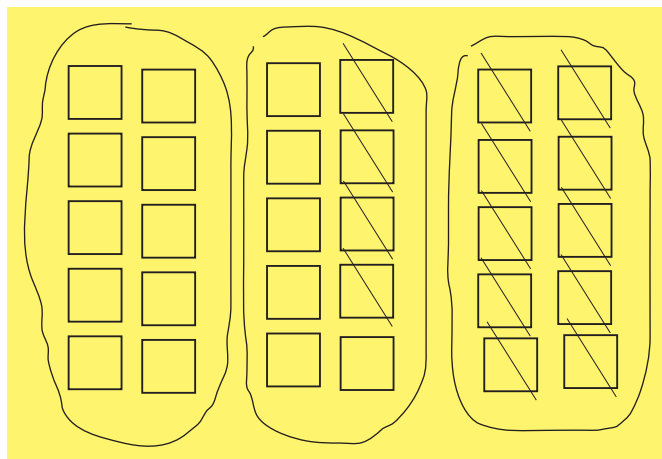
1. $(20 \div 5) + 3 =$ 7

Think: Given 20, make 5 groups. How many in each group? Add 3.

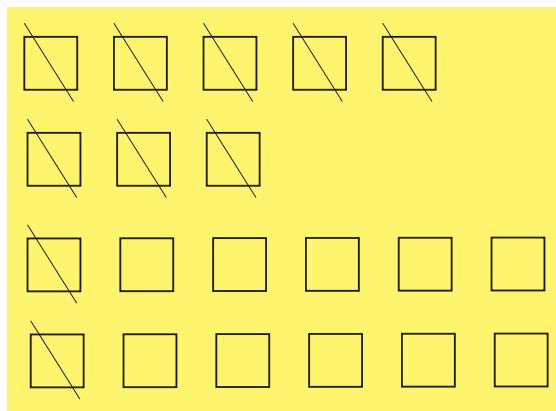


Use Centimeter Cubes to build a model for the problem. Draw your model and use it to complete the problem.

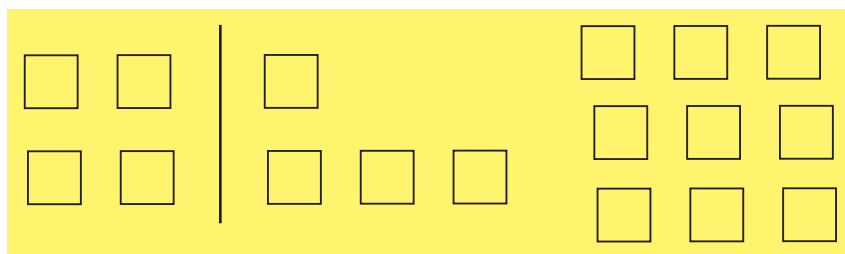
2. $(3 \times 10) - 14 =$ 16



3. $5 + (3 + 12) - 10 =$ 10



4. $(3 + 5) \div 2 + 9 =$ 13



Solve the problem. Write an expression to show the answer.

5. Stephanie had 15 pencils. She kept 3 for herself, and she gave the remaining pencils to 6 of her friends. If each friend received the same number of pencils, how many pencils did each friend get?

$$(15 - 3) \div 6 = 2 \text{ pencils}$$

6. Marco has 5 packets of trading cards. Samantha has 6 packets of trading cards. Each packet has 3 cards. How many cards do they have in all?

$$(5 + 6) \times 3 = 33 \text{ cards}$$

2

- a. Sarah doubles her lucky number. She doubles her number again and she gets 16. What is her lucky number?
- b. Brandon has a lucky number. If he adds 5 to his lucky number and doubles the result, he gets 14. What is Brandon's lucky number?

ANSWER: a. 4; b. 2

COMMENTS & EXTENSIONS: One way (of several) to solve this is Trial and Success. Try something, see what happens, then make adjustments as needed. In Part b, suppose you make a first guess that Brandon's number is 7. Add 5 and double it and you get 24, so you know 7 is too high. Trial-and-Success is one of the most powerful tactics in problem solving!



Can you solve either Part **a** or **b** in a different way?

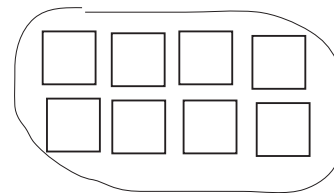
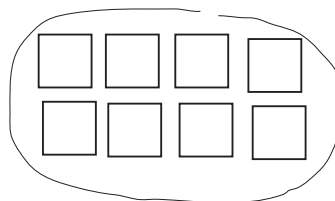
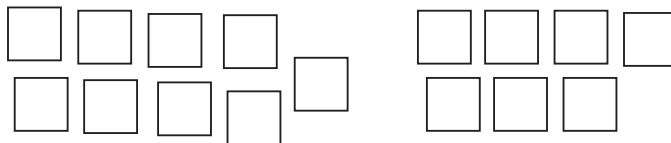


Try This

Write a number expression for the given word expression.

Add 9 and 7; then divide by 2.

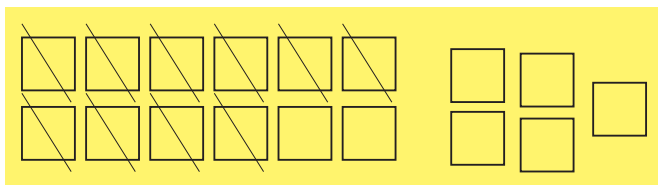
- Use Centimeter Cubes to build a model.
- Draw your model.
- Write a number expression.



The number expression is $(9 + 7) \div 2$.

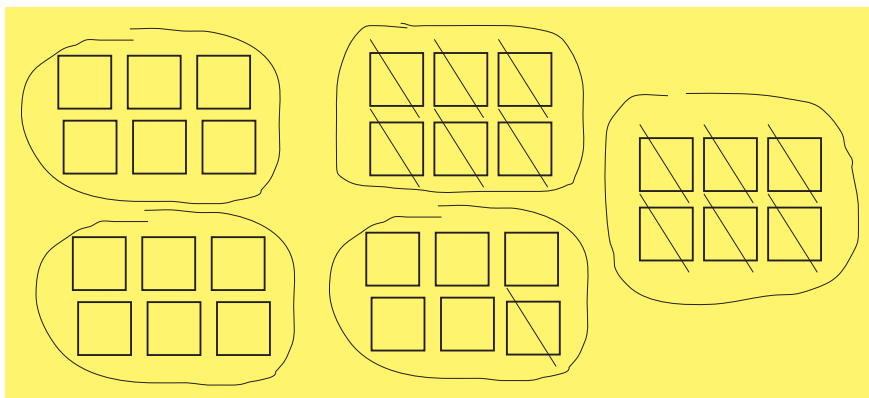
1. Subtract 10 from 12; then add 5.

Expression: 12 - 10 + 5, or (12 - 10) + 5



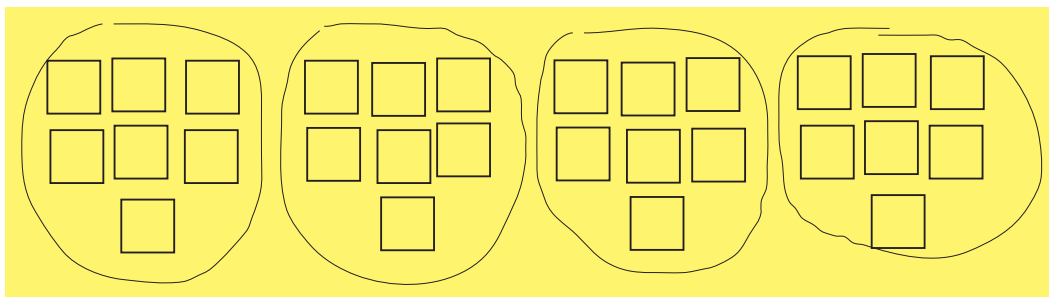
2. Multiply 5 by 6; then subtract 13.

Expression: 5 × 6 - 13, or (5 × 6) - 13



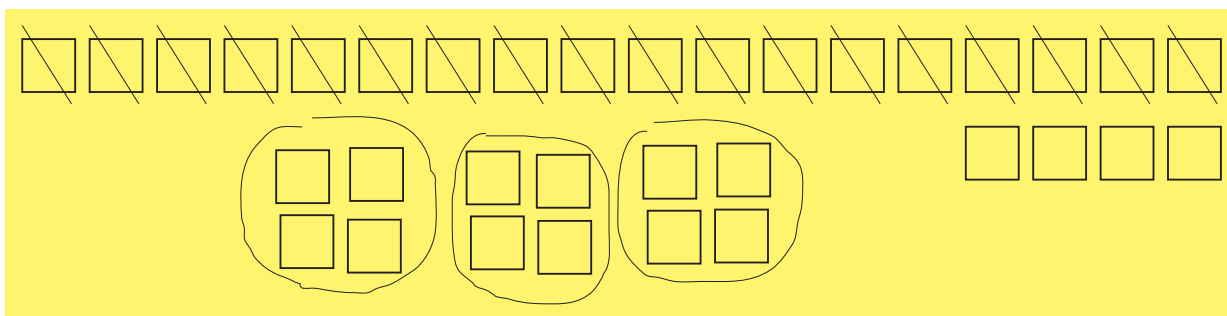
3. Combine 12 and 16; then divide by 4.

Expression: (12 + 16) ÷ 4



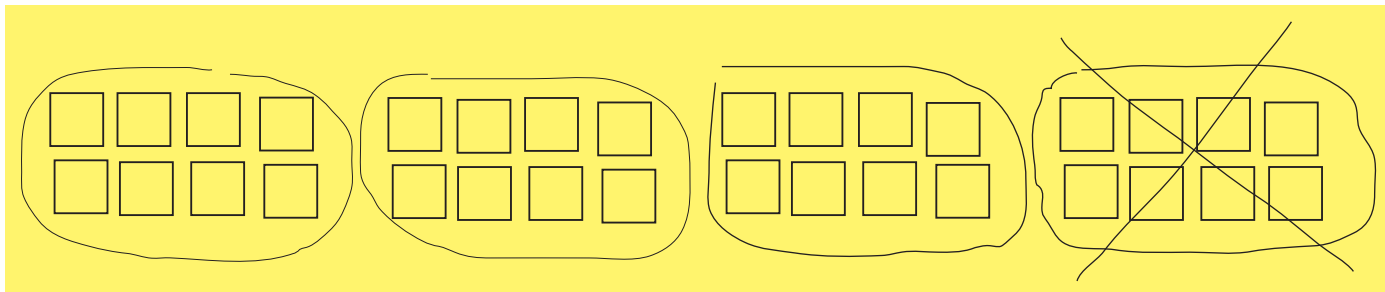
4. Find the difference between 22 and 18; then multiply by 3.

Expression: (22 - 18) × 3



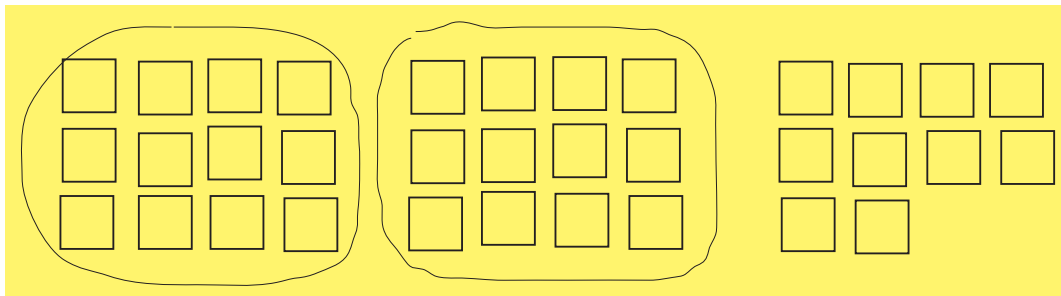
5. Tate has 32 gumballs. He divides them into 4 bags. He gives 1 bag of gumballs to his friend Harish.

Expression: 32 - (32 ÷ 4)



6. Allison had 2 containers of water balloons. Each container had 12 balloons. Her friend Supriya brought 10 more balloons.

Expression: $2 \times 12 + 10$



Write a number expression.

7. Divide one thousand, two hundred eighty by 40, then add 145 to the quotient.

$1,280 \div 40 + 145$

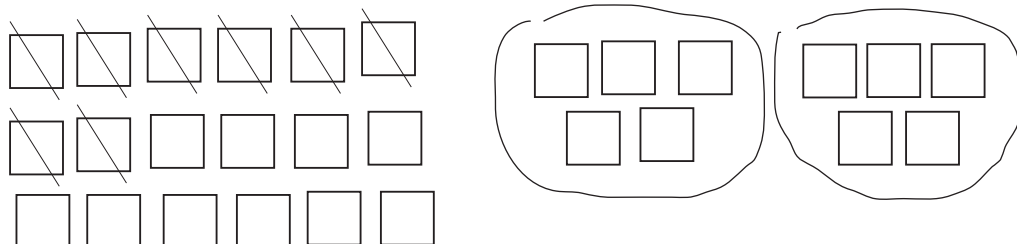
8. Add 12,543 and 3,567; then multiply by 23.

$(12,543 + 3,567) \times 23$

Use Centimeter Cubes to build the model. Use the model to help you write a number expression.

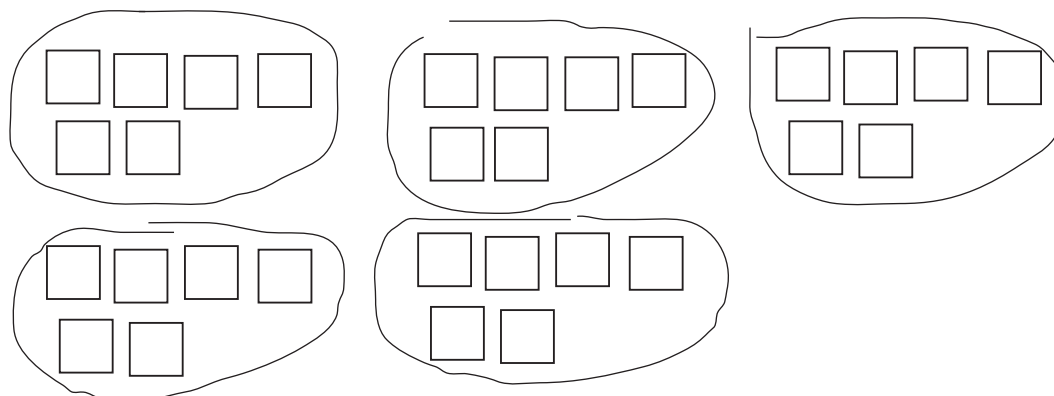
1. Subtract 8 from 18; then divide by 2.

Expression: (18 - 8) ÷ 2



2. Add 4 and 2, then multiply by 5.

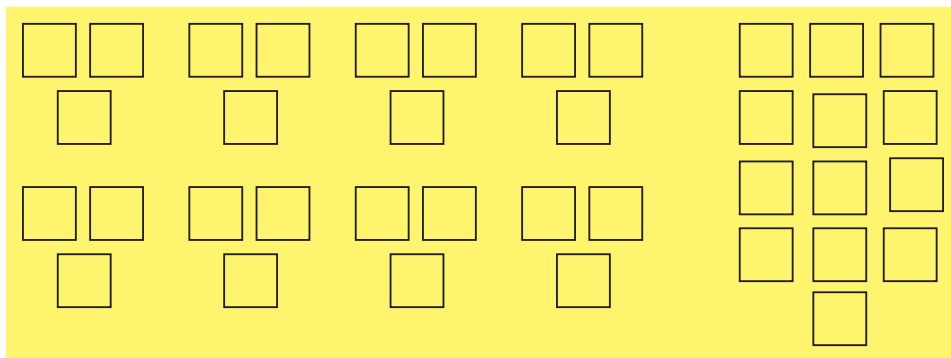
Expression: (4 + 2) × 5



Build a model for the word expression. Draw your model, and use it to write a number expression.

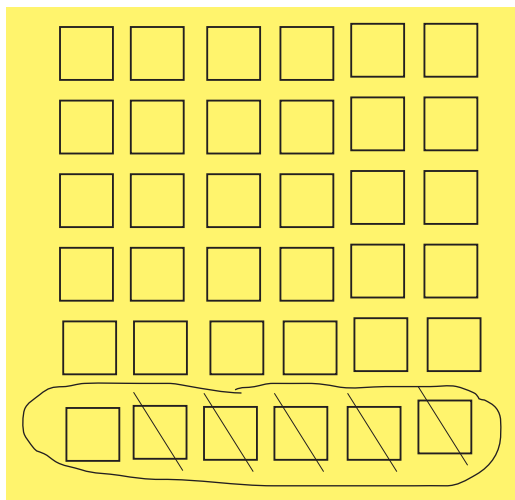
3. Multiply 8 and 3, then increase by 13.

Expression: $8 \times 3 + 13$, or $(8 \times 3) + 13$



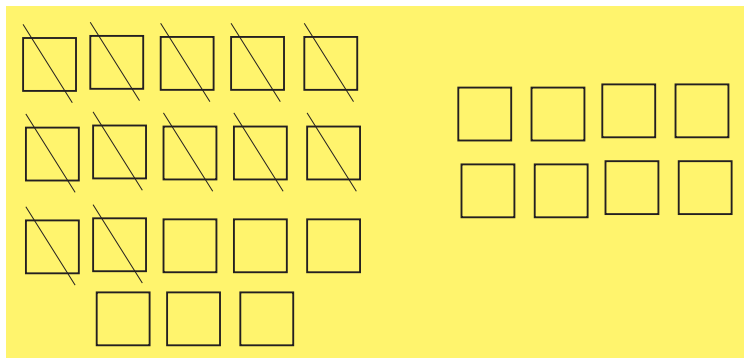
4. Make the quotient of 36 and 6, then decrease by 5.

Expression: (36 ÷ 6) - 5



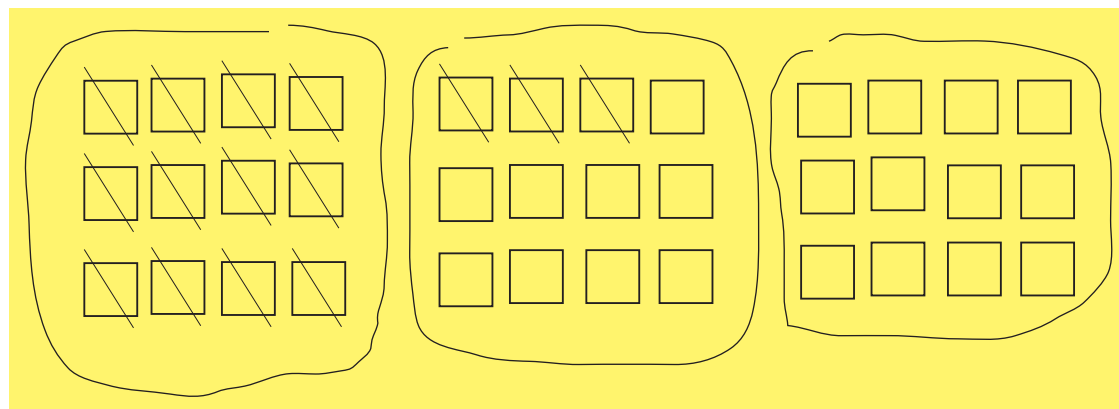
5. Sarah had 18 jellybeans. She ate 12 of them; then her friend gave her 8 more.

Expression: 18 - 12 + 8, or (18 - 12) + 8



6. Brianne had 3 containers of strawberries with 12 strawberries in each container. She ate 15 of the strawberries.

Expression: 3 × 12 - 15, or (3 × 12) - 15



continued on the next page

Write a number expression.

7. Make the product of 1,345 and 245, then take away 3,567.

Expression: (1,345 × 245) – 3,567

8. Divide 4,636 by 4, then add 398.

Expression: (4,636 ÷ 4) + 398

Name Answer Key

3

- a. Suppose this is a secret code where $XXXOO = 16$ and $XXOO = 12$. What is XOO ?
- b. Suppose this is a secret code where $\Delta\Delta\Delta\Delta\yen\yen = 18$ and $\Delta\Delta\yen\yen\yen = 19$. In this code, what is 16?

ANSWER: a. 8; b. $\Delta\Delta\Delta\yen\yen$

COMMENTS & EXTENSIONS: Here, $X = 4$, $O = 2$, $\Delta = 2$, and $\yen = 5$. In Part **b** students are challenged to do the opposite of what they did in Part **a**.



Try This

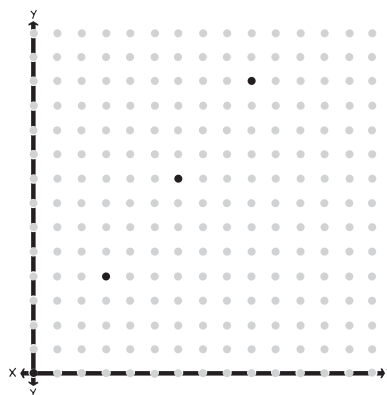
Barbara can carry 3 bags in one trip. Gary can carry 4 bags in one trip. How many bags can Barbara carry in 3 trips? How many more bags can Gary carry in 3 trips than Barbara can?

- Use Cuisenaire Rods to model the problem.
- Sketch your model and use it to fill in the table.
- Use the table to graph ordered pairs on the XY Coordinate Pegboard.
- Draw your graph and answer the questions.

lt green lt green lt green

purple purple purple

Trip	0	1	2	3
Barbara	0	3	6	9
Gary	0	4	8	12



Barbara can carry 9 bags. Gary can carry 12 bags, which is 3 more than Barbara.

1. Sally earns \$2 in allowance per week. Bethany earns \$4 in allowance per week.

How much will each of them have earned after 3 weeks? Sally: \$6; Bethany: \$12

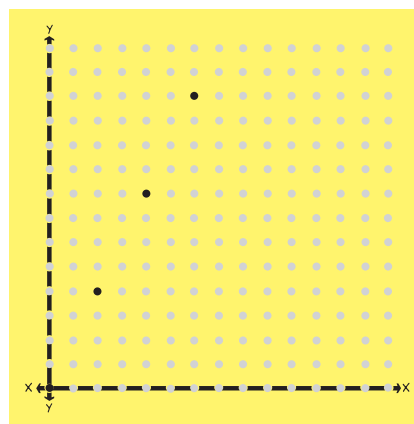
How much more has Sally earned than Bethany at the end of week 2?

\$4

red red red

purple purple purple

Week	0	1	2	3
Sally	0	2	4	6
Bethany	0	4	8	12

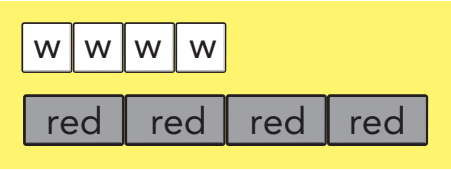


2. Patrick runs a lap in 1 minute. Daniel runs a lap in 2 minutes. If they could continue at each speed, how many minutes would it take each boy to run 4 laps?

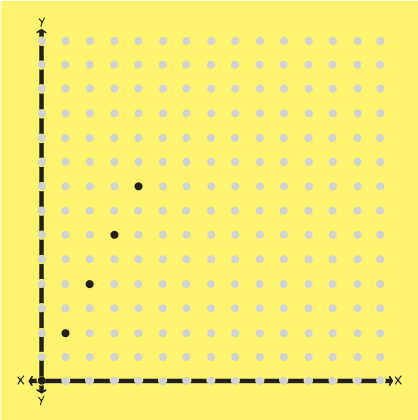
Patrick: 4 minutes; Daniel: 8 minutes

How many more minutes would it take Daniel than it would take Patrick?

4 minutes



Lap	0	1	2	3	4
Patrick	0	1	2	3	4
Daniel	0	2	4	6	8



Complete the table and sketch a graph on grid paper to help you answer the question.

3. Each rectangular table can seat 4 people. Each hexagonal table can seat 6 people. How many hexagonal tables are needed to seat 24 people?

4 tables

How many rectangular tables are needed to seat 24 people?

6 tables

Number of tables	0	1	2	3	4	5	6
Rectangular	0	4	8	12	16	20	24
Hexagonal	0	6	12	18	24	30	36

Check students' graphs.

4. Marcia uses 3 toothpicks to create a triangle. She uses 6 toothpicks to create a rectangle. How many triangles can she create with 12 toothpicks?

4

How many rectangles can she create with 30 toothpicks? 5

Number of shapes 0 1 2 3 4 5

Check students' graphs.

Triangle	0	3	6	9	12	15
Rectangle	0	6	12	18	24	30

5. You and your sister want to go to the museum to see the dinosaur exhibit. The museum has two different plans.

Plan A: Pay \$3 for each visit to the museum.

Plan B: Monthly membership is \$8. Monthly members can go as many times as they like during the month.

You and your sister want to see the dinosaur exhibit 3 times this month.

Which plan would cost less? Plan B

Visits 0 1 2 3

Check students' graphs.

Plan A	0	3	6	9
Plan B	8	8	8	8

6. Jackson likes to watch the 2 squirrels that live in his yard find and store acorns for the winter. The brown squirrel can carry two acorns at a time. The gray squirrel can carry four acorns at a time. How many trips will it take the brown squirrel to store 10 acorns?

5

How many trips will it take the gray squirrel to store 16 acorns? 4

How many more acorns can the gray squirrel carry than the brown squirrel?

twice as many

Trips 0 1 2 3 4 5

Check students' graphs.

Brown	0	2	4	6	8	10
Gray	0	4	8	12	16	20

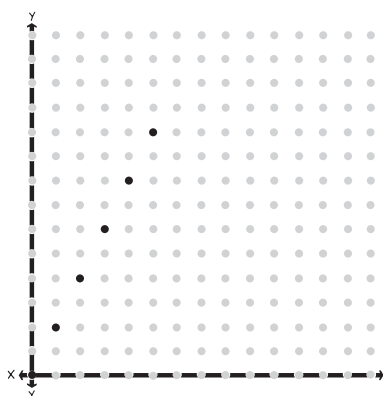
Use Cuisenaire Rods and an XY Coordinate Pegboard to build the models. Complete the table, and complete the sentence.

1. Leon runs 1 lap each day in gym class. Tony runs 2 laps each day. In 5 days, Tony runs 5 more laps than Leon.

Days	0	1	2	3	4	5
Leon	0	1	2	3	4	5
Tony	0	2	4	6	8	10

W W W W W

red red red red red



Use Cuisenaire Rods to model the problem. Complete the table and use it to graph ordered pairs on an XY Coordinate Pegboard. Answer the questions.

2. Tamara can pack 2 books in each small box and 4 books in each large box. How many books can Tamara pack in 3 small boxes?

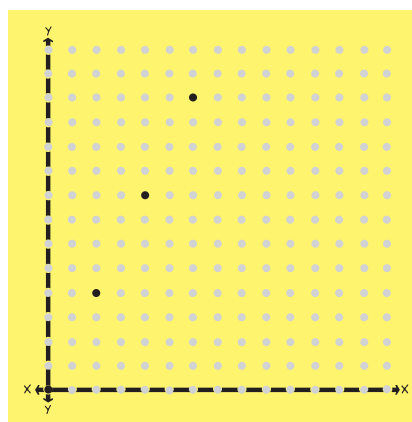
6

How many more books can she pack in 3 large boxes than she can in 3 small boxes? 6

red red red

purple purple purple

Boxes	0	1	2	3
Small box	0	2	4	6
Large box	0	4	8	12

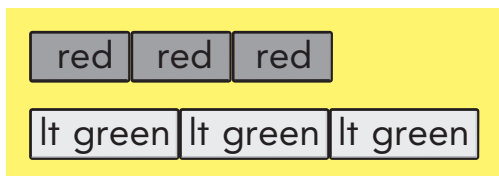


3. Patrice can walk 2 miles each hour. Juanita can walk 3 miles each hour. How many miles could Patrice walk in 3 hours?

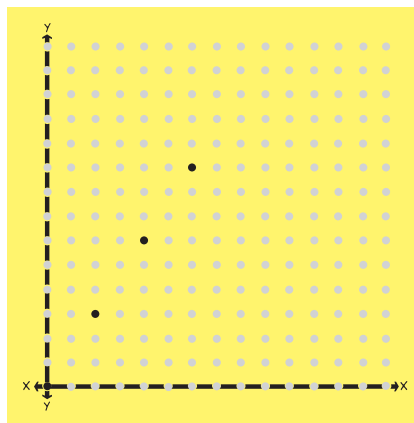
6 miles

How many more miles could Juanita walk in 3 hours than Patrice could walk in 3 hours?

3 miles



Hours	0	1	2	3
Patrice	0	2	4	6
Juanita	0	3	6	9



Complete the table and sketch a graph on grid paper to help you answer the questions.

4. Each square table can seat 4 people. Each rectangular table can seat 8 people. How many people can 4 square tables seat?

16

How many people can 4 rectangular tables seat? 32

The rectangular table seats twice as many people as the square table.

Number of tables	0	1	2	3	4
Square	0	4	8	12	16
Rectangular	0	8	16	24	32

Check students' graphs.

5. Marcus uses 3 toothpicks to create a triangle. He uses 9 toothpicks to create a rectangle. How many triangles can he create with 12 toothpicks?

4

How many rectangles can he create with 27 toothpicks?

3

For each rectangle, Marcus uses 3 times
as many toothpicks as he does for each triangle.

Number of shapes	0	1	2	3	4
Triangle	0	3	6	9	12
Rectangle	0	9	18	27	36

Check students' graphs.