

Learn About

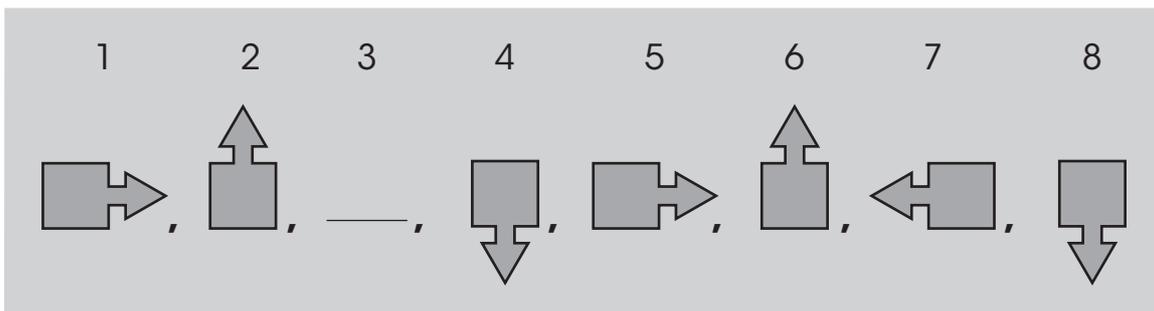
Using Algebra: Patterns

Some **patterns** use shapes or figures. These patterns follow *rules*. The *rule* is used to change from the first figure to the next figure. A line can represent a missing figure in the pattern.

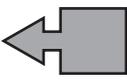
To find the rule, look at a series of figures. Ask these questions:

- What was done to the first figure to get the second figure?
- Is the same thing done to the second figure to get the third figure?
- Is this true for the rest of the figures in the pattern?

Look at the pattern. Try to find the rule.



Find the rule. The figures appear in order. From the first to second figure, the shape makes a $\frac{1}{4}$ turn. The arrow first points right and second points up. The pattern of the arrow is right, up, left, down. The order is repeated beginning with the fifth figure in the pattern.

The missing figure is .



Some **patterns** use shapes or figures. These patterns follow *rules*. The *rule* is used to change from the first figure to the next figure. A line can represent a missing figure in the pattern.

*Look at the answer choices for each question.
Read why each answer choice is correct or
not correct.*

1. Each action figure costs \$3. Ray buys four action figures. Which number sentence can help Ray find the total cost, c , of four action figures?

Ⓐ $\$3 \div 4 = c$

This answer is not correct. The number sentence must show that the total cost (c) is equal to the number of action figures bought (4) times the price of each action figure (\$3).

Ⓑ $4 \times \$3 = c$

This answer is correct. The number sentence shows that the total cost (c) is equal to the number of action figures bought (4) times the price of each action figure (\$3).

Ⓒ $\$3 \times c = 4$

This answer is not correct. The number sentence must show that the total cost (c) is equal to the number of action figures bought (4) times the price of each action figure (\$3).

Ⓓ $4 \div c = \$3$

This answer is not correct. The number sentence must show that the total cost (c) is equal to the number of action figures bought (4) times the price of each action figure (\$3).

2. Ray has saved \$21. Each action figure costs \$3. Which number sentence can help Ray find how many action figures, a , he is able to buy?

Ⓐ $\$3 \div \$21 = a$

This answer is not correct. The number sentence must show that the total cost of the action figures (\$21) divided by the price of each action figure (\$3) is equal to the number of action figures Ray can buy (a).

Ⓑ $\$21 \times \$3 = a$

This answer is not correct. The number sentence must show that the total cost of the action figures (\$21) divided by the price of each action figure (\$3) is equal to the number of action figures Ray can buy (a).

Ⓒ $\$21 \times a = \3

This answer is not correct. The number sentence must show that the total cost of the action figures (\$21) divided by the price of each action figure (\$3) is equal to the number of action figures Ray can buy (a).

Ⓓ $\$21 \div \$3 = a$

This answer is correct. The number sentence shows that the total cost of the action figures (\$21) divided by the price of each action figure (\$3) is equal to the number of action figures Ray can buy (a).

Lesson

6

*Read the passage.
Then do Numbers 1–5.*

Games and Toys

Children in the 19th century enjoyed many of the same toys and games that children enjoy today. They commonly flew kites made of cloth and wood. They skipped and played tag. Hopscotch was also a popular game. The world has changed since the 19th century, but many of the ways that children have fun are still the same.



1. Debbie sells homemade kites for \$6. She sold 17 of her kites at a craft show. Which equation can help you find the amount of money she earned?

- Ⓐ $\$6 + 17 = m$
- Ⓑ $m = \$6 \times 17$
- Ⓒ $\$6 + m = 17$
- Ⓓ $m = \$17 - 6$

2. Keira is shopping for an old-style doll. She has found dolls for three different prices. Each of the prices is a multiple of 6. Which of these groups could be the prices?

- Ⓐ \$36, \$15, \$48
- Ⓑ \$60, \$20, \$30
- Ⓒ \$48, \$12, \$33
- Ⓓ \$48, \$18, \$30

Lesson 18

Read the passage.
Then do Numbers 1–5.

Planting a Garden

Mrs Lee is planting a garden. First, she drew a picture of how she wanted to organise the garden. Next, she marked off rows for each of the plants. Finally, Mrs Lee planted different vegetable plants.



1. Mrs Lee planted 42 capsicums. She put 2 plants in one part of the garden. Then she arranged the remaining plants in 5 equal rows. Which expression can help you find the number of plants in each row?

- Ⓐ $42 - 2 - 5$
- Ⓑ $(42 - 2) \div 5$
- Ⓒ $(42 - 2) + 5$
- Ⓓ $(42 - 5) \div 2$

2. Mrs Lee planted 14 more tomato plants than capsicums. She arranged the tomato plants in 8 equal rows. Which equation can help you find the number of tomato plants, T , in each row?

- Ⓐ $14 \times 8 = T$
- Ⓑ $T = 42 + 14 + 8$
- Ⓒ $(42 \div 8) - 14 = T$
- Ⓓ $T = (42 + 14) \div 8$

Self-Assessment 2

Lessons 6–10

Answer these questions after you have completed Lessons 6–10. Before you begin, re-read what you wrote in Self-Assessment 1.

FOCUS on Using Algebra, Book D

Name _____ Date _____

1. Rate your work in Lessons 6–10. Circle your answer.

successful

somewhat successful

needs improvement

2. Did any of the questions give you trouble? _____

If so, what kind of trouble did you have?

Is this the same kind of trouble you had in Lessons 1–5? _____

3. Did you find the questions easier or more difficult than those in Lessons 1–5?

Why do you think this is so?

4. Did you meet the goal you set for yourself for Lessons 6–10? _____

Why or why not?

5. What is your goal for Lessons 11–15?

Cut along the dotted line.