

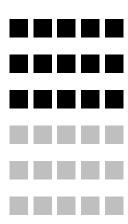
Name	Date
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1. The circus is in town for 14 days. How many weeks is the circus in town? (There are 7 days in 1 week.) Write an equation, and solve.

2. There are 63 liters of fizz needed by the clowns for their big trick. Each container holds 7 liters of fizz. How many containers are needed for the clown's big trick? Represent the problem using multiplication and division sentences and a letter for the unknown. Solve.

3. In the VIP section there are 3 rows of 5 chairs at the circus. A worker is told that he needs to create a larger VIP section and doubles the number of rows of chairs. They are shown below.

Explain and label to show how the array represents both 6×5 and $2 \times (3 \times 5)$.

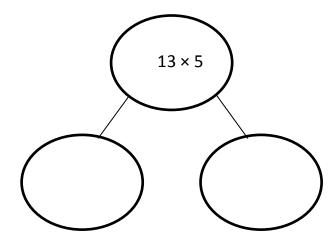


- 4. The juggler uses a variety of items during the show. Every time he starts with a number of objects, by the end, it gets multiplied. Mary writes down how many items he starts with and tries to find a pattern to see how many items he ends with. Look at her notes below.
 - a. Use the pattern to fill in the number of balls.

Start	End
2 cups	10 cups
3 bowling pins	15 bowling pins
4 rings	20 rings
5 balls	balls

b. What is the jugglers pattern? Explain how you know.

c. The juggler picks up 13 beanbags for the finale. Mary draws a number bond to find the total number of beanbags the juggler will try to juggle after they are multiplied. Use the number bond to show how Mary might have solved the problem.



d.	Mary bought a clown hat with 8 polka dots. Her 3 sisters also bought the same hat. How many dots are on the 4 hats? Write an equation using a letter to represent the unknown. Solve.
e.	After the show, Mary and her 3 sisters equally share the cost of a \$24 juggling set. They use the equation $4 \times n = 24 to figure out how much each person pays. How much does Mary pay?

Common Core Standards: 3.OA.3, 3.OA.4, 3.OA.5, 3.OA.7, 3.OA.9

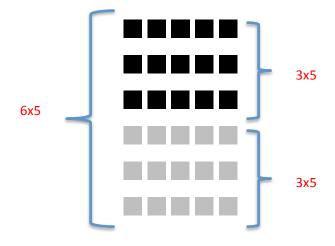
Answer Key

- 1. The circus is in town for 14 days. How many weeks is the circus in town? (There are 7 days in 1 week.) Write an equation, and solve.(4pts= writes correct equation with correct answer, 3pts= writes correct equation with incorrect answer, 2pts= mixes the order of the division problem (14÷2), 1pt=no equation and does not understand the question)(3.OA.3, 3.OA.4)
 - 7, 14 14÷7 = 2

The circus is in town for 2 weeks

- 2. There are 63 liters of fizz needed by the clowns for their big trick. Each container holds 7 liters of fizz. How many containers are needed for the clown's big trick? Represent the problem using multiplication and division sentences and a letter for the unknown. Solve. (4pts= writes 2 correct equation with correct answer including labels, 3pts= writes correct equations with no answer, 2pts= attempts to write both problems and uses a letter for the unknown 1pt=unable to write equations and does not understand the question)(3.OA.3, 3.OA.4)
 - $c \times 7 = 63$ c =the number of containers $c \times 7 = c$ c = 9 9 containers of fizz are needed by the clowns for their trick
- 3. In the VIP section there are 3 rows of 5 chairs at the circus. A worker is told that he needs to create a larger VIP section and doubles the number of rows of chairs. They are shown below. (4pts= explains and labels the array showing understanding of associative property, 3pts= labels the array but lacks explanation, 2pts= writes 1 expression and attempts to explain, 1pt=unable to explain or label the array)(3.OA.3, 3.OA.4)

Explain and label to show how the array represents both 6×5 and $2 \times (3 \times 5)$.



The array shows 2 ways. You can see the total array as 6 x 5 or you can see the array as 3 rows of 5 as the black rows and 3 rows of 5 as the gray rows. Both arrays have the same total of 30 chairs.

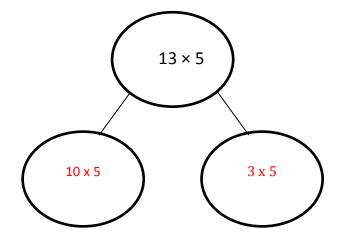
- 4. The juggler uses a variety of items during the show. Every time he starts with a number of objects, by the end, it gets multiplied. Mary writes down how many items he starts with and tries to find a pattern to see how many items he ends with. Look at her notes below. (4pts= answers all 5 parts correctly 3pts= answers 3 or 4 parts correctly, 2pts= answers 2 parts correctly, 1pt=answers 1 part correctly)(3.OA.3, 3.OA.4, 3.OA.5, 3.OA.9)
 - a. Use the pattern to fill in the number of balls.

Start		End	
2 cups	x5	10 cups	
3 bowling pin	s x 5	15 bowling pins	
4 rings	x5	20 rings	
5 balls	x5	25 balls	

b. What is the jugglers pattern? Explain how you know.

The juggler multiplies objects by 5. When he starts juggling objects then he adds more and ends with 5 times more. When he juggles 5 balls he ends with 25 balls.

c. The juggler picks up 13 beanbags for the finale. Mary draws a number bond to find the total number of beanbags the juggler will try to juggle after they are multiplied. Use the number bond to show how Mary might have solved the problem.



$$(10 \times 5) + (3 \times 5) = 13 \times 5$$

 $50 + 15 = 65$

when the juggler starts with 13 rings he ends with 65 rings

d.	Mary bought a clown hat with 8 polka dots. Her 3 sisters also bought the same hat.	How many
	dots are on the 4 hats? Write an equation using a letter to represent the unknown.	Solve.

$$8 \times 4 = p$$
 p = total number of polka dots

e. After the show, Mary and her 3 sisters equally share the cost of a \$24 juggling set. They use the equation $4 \times n = 24 to figure out how much each person pays. How much does Mary pay?

$$4 \times n = $24$$
 is the same as $$24 \div 4 = n$

n is the amount each sister paid.

Mary paid \$6