EUREKA MATH PUSD

Solutions

Exit Tickets

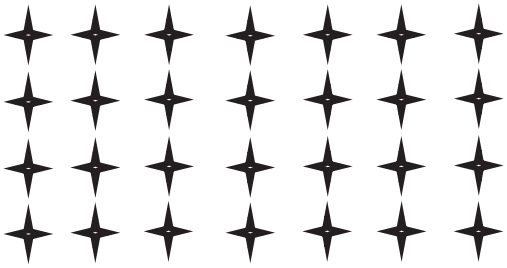
Solutions

GRADE 3
MODULE 3

Version 3

Name _____ Date _____

1. Use the array to write two different multiplication facts.

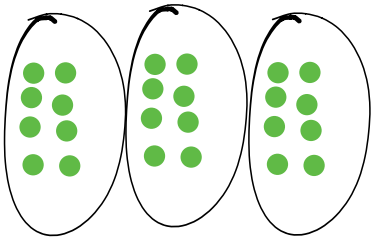


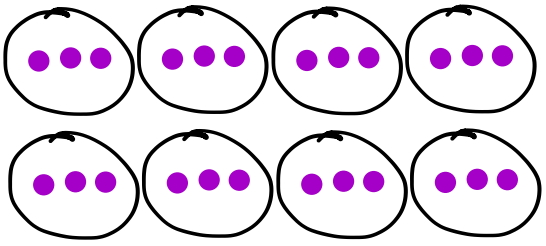
28 = 4 × 7

28 = 7 × 4

2. Karen says, "If I know 3 × 8 = 24, then I know the answer to 8 × 3." Explain why this is true.

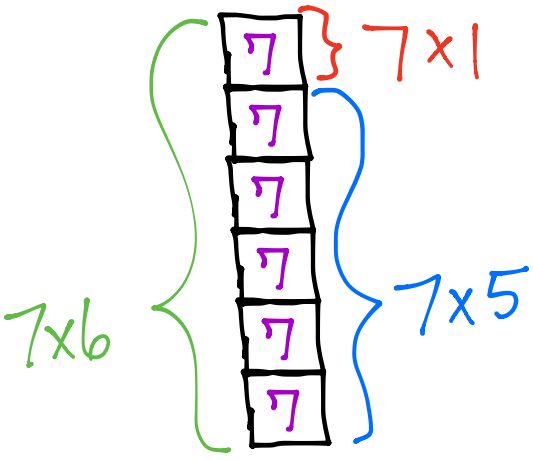
If 3×8=24, then we know 8×3=24 because 3 eights is equal to 8 threes.





Name _____ Date _____

Use a fives fact to help you solve 7 × 6. Show your work using pictures, numbers, or words.



$7 \times 6 = (7 \times 5) + (7 \times 1)$

$7 \times 6 = 35 + 7$

$7 \times 6 = 42$

6 sevens is equal to 5 sevens plus 1 more seven.

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Find the value of the unknown in Problems 1–4.

1. $z = 5 \times 9$
   $z =$ 45

2. $30 \div 6 = v$
   $v =$ 5

3. $8 \times w = 24$
   $w =$ 3

4. $y \div 4 = 7$
   $y =$ 28

5. Mr. Strand waters his rose bushes for a total of 15 minutes. He waters each rose bush for 3 minutes. How many rose bushes does Mr. Strand water? Represent the problem using multiplication and division sentences and a letter for the unknown. Then, solve the problem.

   3 × 5 = 15

   15 ÷ 3 = 5

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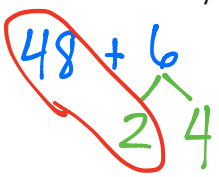
1. Sylvia solves 6 × 9 by adding 48 + 6. Show how Sylvia breaks apart and bonds her numbers to complete the ten. Then, solve.



48+2 = 50
50+4 = 54

2. Skip-count by six to solve the following:

a. 8 × 6 = 48

b. 54 ÷ 6 = 9

6, 12, 18, 24, 30, 36, 42, 48, 54, ...

Name _____ Date _____

Complete the count-by seven sequence below. Then, write a multiplication equation and a division equation to represent each number in the sequence.

7, 14, 21, 28, 35, 42, 49, 56, 63, 70

a. 1 × 7 = 7 7 ÷ 7 = 1

b. 2 × 7 = 14 14 ÷ 7 = 2

c. 3 × 7 = 21 21 ÷ 7 = 3

d. 4 × 7 = 28 28 ÷ 7 = 4

e. 5 × 7 = 35 35 ÷ 7 = 5

f. 6 × 7 = 42 42 ÷ 7 = 6

g. 7 × 7 = 49 49 ÷ 7 = 7

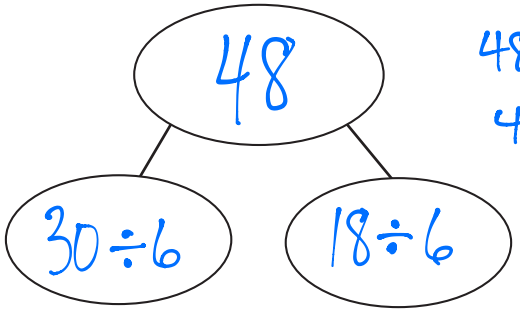
h. 8 × 7 = 56 56 ÷ 7 = 8

i. 9 × 7 = 63 63 ÷ 7 = 9

j. 10 × 7 = 70 70 ÷ 7 = 10

Name _____ Date _____

1. A parking lot has space for 48 cars. Six cars can park in 1 row. Break apart 48 to find how many rows there are in the parking lot.



$48 \div 6 = (30 \div 6) + (18 \div 6)$

$48 \div 6 = 5 + 3$

$48 \div 6 = 8$

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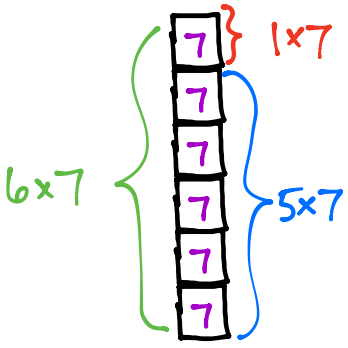
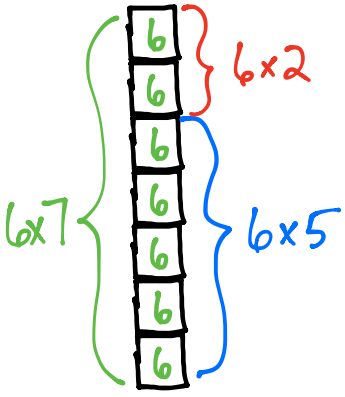
2. Malia solves 6 × 7 using (5 × 7) + 7. Leonidas solves 6 × 7 using (6 × 5) + (6 × 2). Who is correct? Draw a picture to help explain your answer.

Malia



Leonidas



They are both correct.

$6 \times 7 = 5 \times 7 + 1 \times 7$

$= 35 + 7$

$= 42$

$6 \times 7 = 42$

$6 \times 7 = 6 \times 5 + 6 \times 2$

$= 30 + 12$

$= 42$

$6 \times 7 = 42$

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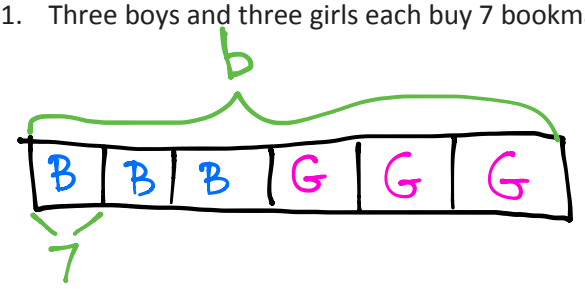
Model each problem with a drawing. Then, write an equation using a letter to represent the unknown, and solve for the unknown.

1. Three boys and three girls each buy 7 bookmarks. How many bookmarks do they buy all together?

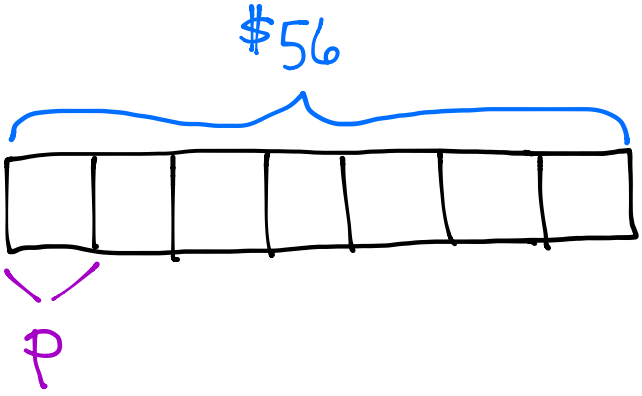


$6 \times 7 = b$

$42 = b$

They buy 42 bookmarks altogether.

2. Seven friends equally share the cost of a $56 meal. How much does each person pay?



$56 \div 7 = p$

$8 = p$

OR

$7 \times p = 56$

$p = 8$

Each person pays $8 for the meal.

Name _____ Date _____

1. Use parentheses to make the equations true.

   a. 24 = (32 – 14) + 6

   b. 12 = 32 – (14 + 6)

   c. (2 + 8) × 7 = 70

   d. 2 + (8 × 7) = 58

2. Marcos solves 24 ÷ 6 + 2 = _____. He says it equals 6. Iris says it equals 3. Show how the position of parentheses in the equation can make both answers true.

Marcos

(24 ÷ 6) + 2 =

4 + 2 = 6

Iris

24 ÷ (6 + 2) =

24 ÷ 8 = 3

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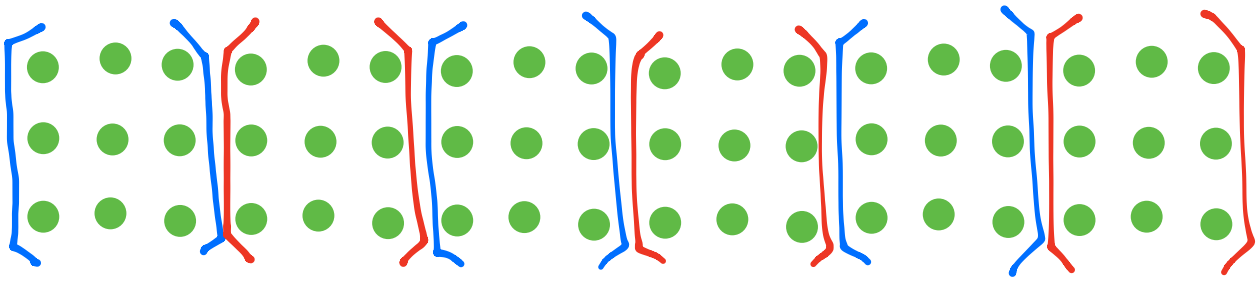
Simplify to find the answer to 18 × 3. Show your work, and explain your strategy.



$18 \times 3 = 6 \times (3 \times 3)$

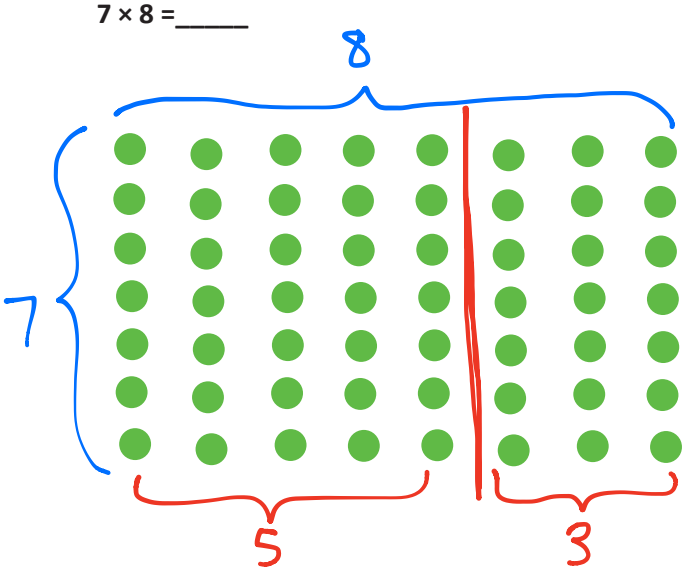
$= 6 \times 9$

$= 54$

Name _____ Date _____

Use the break apart and distribute strategy to solve the following problem. You may choose whether or not to draw an array.

7 × 8 =_____



$7 \times 8 = 7 \times 5 + 7 \times 3$

$= 35 + 21$

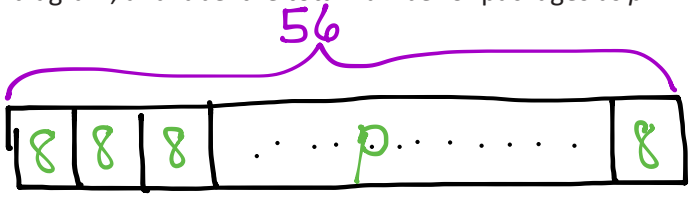
$= 56$

$7 \times 8 = 56$

Name _____ Date _____

Erica buys some packs of rubber bracelets. There are 8 bracelets in each pack.

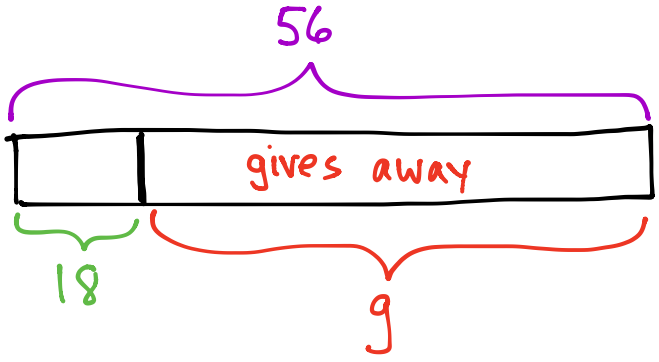
a. How many packs of rubber bracelets does she buy if she has a total of 56 bracelets? Draw a tape diagram, and label the total number of packages as *p*. Write an equation, and solve for *p*.



$56 \div 8 = p$

$7 = p$

b. After giving some bracelets away, Erica has 18 left. How many bracelets did she give away?



$56 - g = 18$

$g = 38$

Erica gave away 38 bracelets.

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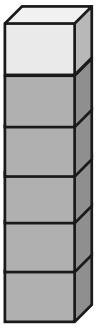
1. Each  has a value of **9**. Complete the equations to find the total value of the tower of blocks.



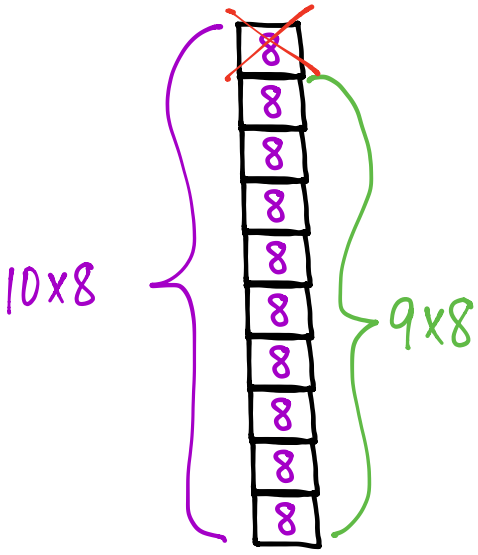
6 × **9** = (5 + 1) × 9

= (5 × 9) + (1 × 9)

= 45 + 9

= 54

2. Hector solves 9 × 8 by subtracting 1 eight from 10 eights. Draw a model, and explain Hector's strategy.



$9 \times 8 = 10 \times 8 - 1 \times 8$

$= 80 - 8$

$= 72$

OR

9 groups of 8 is equal to 10 groups of 8 minus 1 group of 8.

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1. $6 \times 9 = 54$

   What is 10 more than 54? 64

   What is 1 less? 63

   $7 \times 9 =$ 63

   $8 \times 9 = 72$

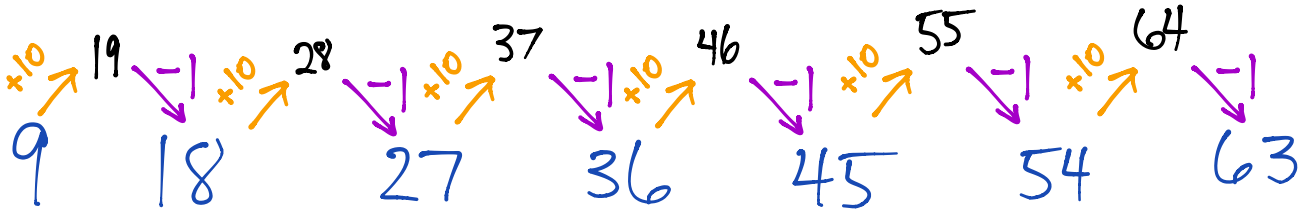
   What is 10 more than 72? 82

   What is 1 less? 81

   $9 \times 9 =$ 81

2. Explain the pattern used in Problem 1.

To add one more 9, you can add 10, then subtract 1.



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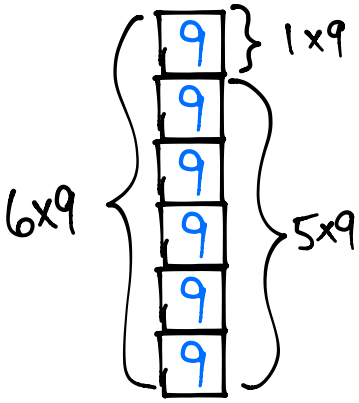
Donald writes 6 × 9 = 54. Explain two strategies you could use to check his work.

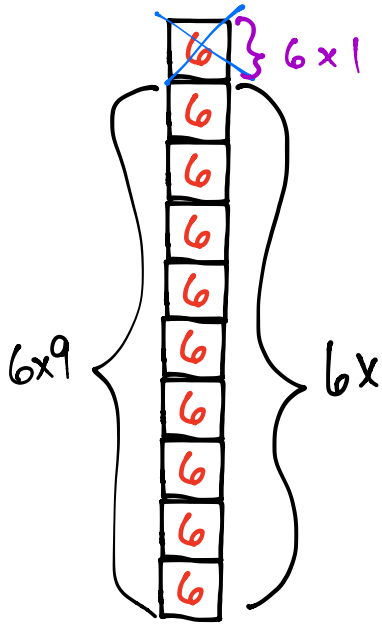


$6 \times 9 = 5 \times 9 + 1 \times 9$

$= 45 + 9$

$= 54$

Other methods also exist



$6 \times 9 = 6 \times 10 - 6 \times 1$

$= 60 - 6$

$= 54$

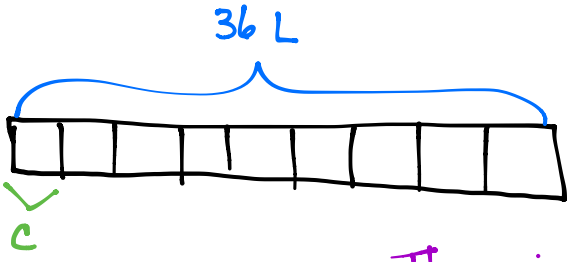
+9 +9 +9 +9 +9

9, 18, 27, 36, 45, 54

Name _____ Date _____

Use a letter to represent the unknown.

1. Mrs. Aquino pours 36 liters of water equally into 9 containers. How much water is in each container?

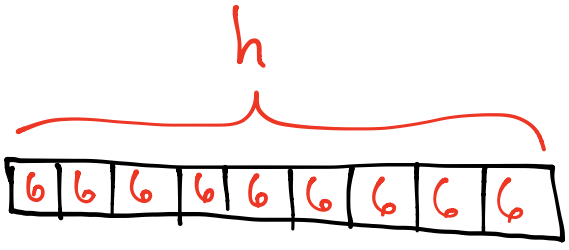


$36 \div 9 = c$

$4 = c$

There is 4 L of water in each container.

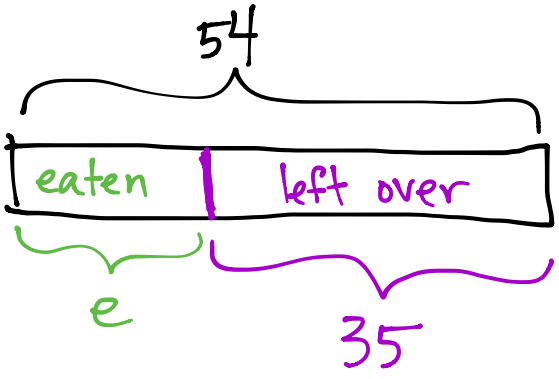
2. Marlon buys 9 packs of hot dogs. There are 6 hot dogs in each pack. After the barbeque, 35 hot dogs are left over. How many hot dogs were eaten?



$9 \times 6 = h$

$54 = h$

Marlon bought 54 hot dogs.



$54 - 35 = e$

$19 = e$

19 hot dogs were eaten.

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1. Complete.

a. 5 × 1 = 5

b. 6 × 1 = 6

c. 0 ÷ 7 = 0

d. 5 × 0 = 0

e. 1 = 9 ÷ 9

f. 8 = 1 × 8

2. Luis divides 8 by 0 and says it equals 0. Is he correct? Explain why or why not.

If $8 \div 0 = 0$, then $0 \times 0 = 8$.

Since $0 \times 0 = 8$ is NOT true, this means Luis is incorrect.

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1. Use what you know to find the product of 8 × 12 or 6 eights + 6 eights.

8x12 = 12 eights = 6 eights + 6eights = 48 + 48 = 96

8 x 12 = 96

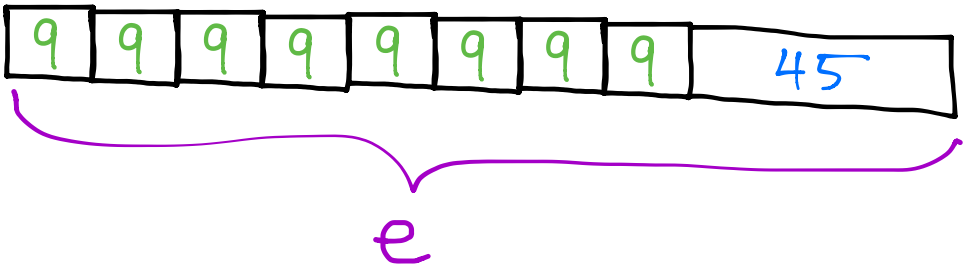
2. Luis says 3 × 233 = 626. Use what you learned about odd times odd to explain why Luis is wrong.

We know that an odd times an odd ALWAYS gives an odd product. Since Luis got 626, we know he must be wrong.

Name _____ Date _____

Use the RDW process to solve. Explain why your answer is reasonable.

On Saturday, Warren swims laps in the pool for 45 minutes. On Sunday, he runs 8 miles. It takes him 9 minutes to run each mile. How long does Warren spend exercising over the weekend?



$8 \times 9 + 45 = e$

$72 + 45 = e$

$117 = e$

$$\begin{array}{r} 72 \\ +45 \\ \hline 117 \end{array}$$

Warren exercised for 117 minutes.

Name _____ Date _____

1. Use the chart to complete the blanks in the equations.

tens	ones
	●●●●● ●●●●● ●●●●● ●●●●● ●●●●● ●●●●●

6 × 5 ones = 30 ones

6 × 5 = 30

tens	ones
●●●●● ●●●●● ●●●●● ●●●●● ●●●●● ●●●●●	

6 × 5 tens = 30 tens

6 × 50 = 300

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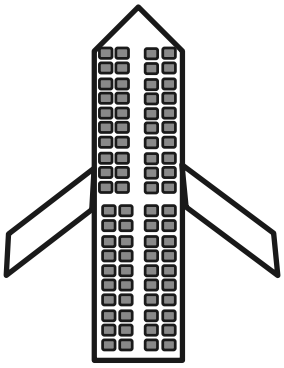
2. A small plane has 20 rows of seats. Each row has 4 seats.

   a. Find the total number of seats on the plane.

4x20 = 4 x 2 tens = 8 tens = 80

There are 80 seats.



   b. How many seats are on 3 small planes?

3 x 80 = 3 x 8 tens = 24 tens = 240

There are 240 seats.

Name _____ Date _____

1. Place parentheses in the equations to find the related fact. Then, solve.

a. $4 \times 20 = 4 \times 2 \times 10$

$= 4 \times 2 \times 10$

$= \underline{8} \times 10$

$= \underline{80}$

b. $3 \times 30 = 3 \times 3 \times 10$

$= 3 \times 3 \times 10$

$= \underline{9} \times 10$

$= \underline{90}$

2. Jamila solves 20×5 by thinking about 10 tens. Explain her strategy.

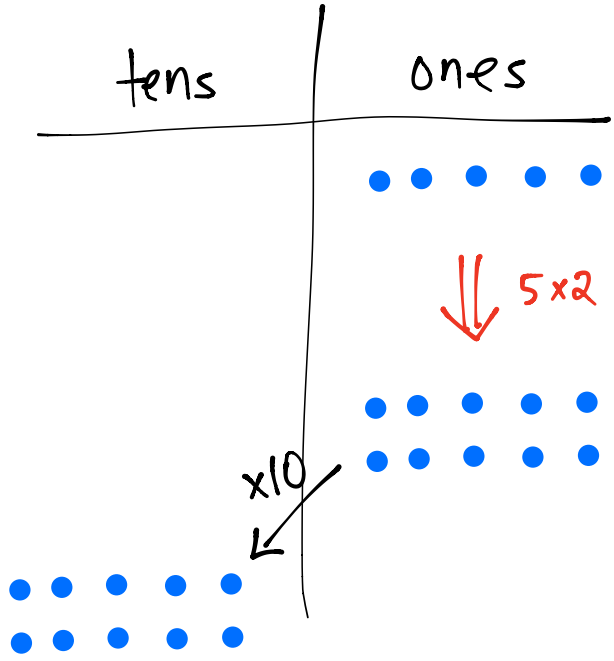
$20 \times 5 = 5 \times 20$

$= 5 \times 2 \times 10$

$= 10 \times 10$

$= 10$ tens

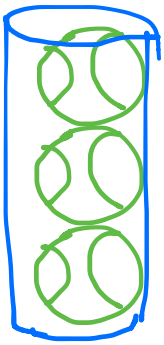
$= 100$



Name _____ Date _____

Use the RDW process to solve. Use a letter to represent the unknown.

Frederick buys a can of 3 tennis balls. The empty can weighs 20 grams, and each tennis ball weighs 60 grams. What is the total weight of the can with 3 tennis balls?



$3 \times 60 + 20$

$180 + 20$

200

The total weight is 200 grams.