The answer key in the modules shows the shading for all the facts they already know. Below the facts for 6, 7, 8, 9 that they know have been shaded.

Name _____ Date _____

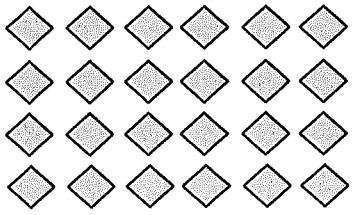
1. a. Solve. Shade in the multiplication facts for sixes, sevens, eights, and nines that you already know.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

b. Complete the chart. Each bag contains 7 apples.

Number of bags	2	3	4	5	6
Total number of apples	14	21	28	35	42

2. Use the array to write two different multiplication sentences.



24 = 6 × 4

24 = 4 × 6

3. Complete the equations.

a. 2 sevens = 7 twos
= 14

b. 3 sixes = 6 threes
= 18

c. 10 eights = 8 tens
= 80

d. 4 × 6 = 6 × 4
= 24

e. 8 × 5 = 5 × 8
= 40

f. 4 × 7 = 7 × 4
= 28

g. 3 × 9 = 10 threes − 1 three
= 27
30-3

h. 10 fours − 1 four = 9 × 4
= 36
40-4

i. 8 × 4 = 5 fours + 3 fours
= 32
20+12

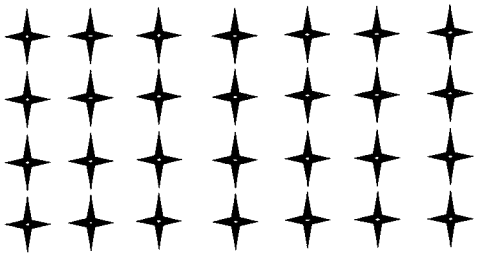
j. 5 fives + 1 five = 6 × 5
= 30
25+5

k. 5 threes + 2 threes = 7 × 3
15+6
= 21

l. 8 twos + 2 twos = 10 twos
16+4
= 20

Name _____ Date _____

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



28 = 7 × 4

28 = 4 × 7

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

The commutative property says that even if the order of the factors changes, the product stays the same.

Name _____ Date _____

1. Complete the charts below.

a. A tricycle has 3 wheels.

Number of tricycles	3	4	5	6	7
Total number of wheels	9	12	15	18	21

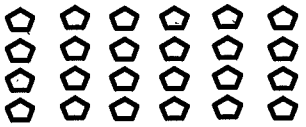
b. A tiger has 4 legs.

Number of tigers	5	6	7	8	9
Total number of legs	20	24	28	32	36

c. A pack has 5 erasers.

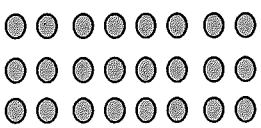
Number of packs	6	7	8	9	10
Total number of erasers	30	35	40	45	50

2. Write two multiplication facts for each array.



24 = 4 × 6

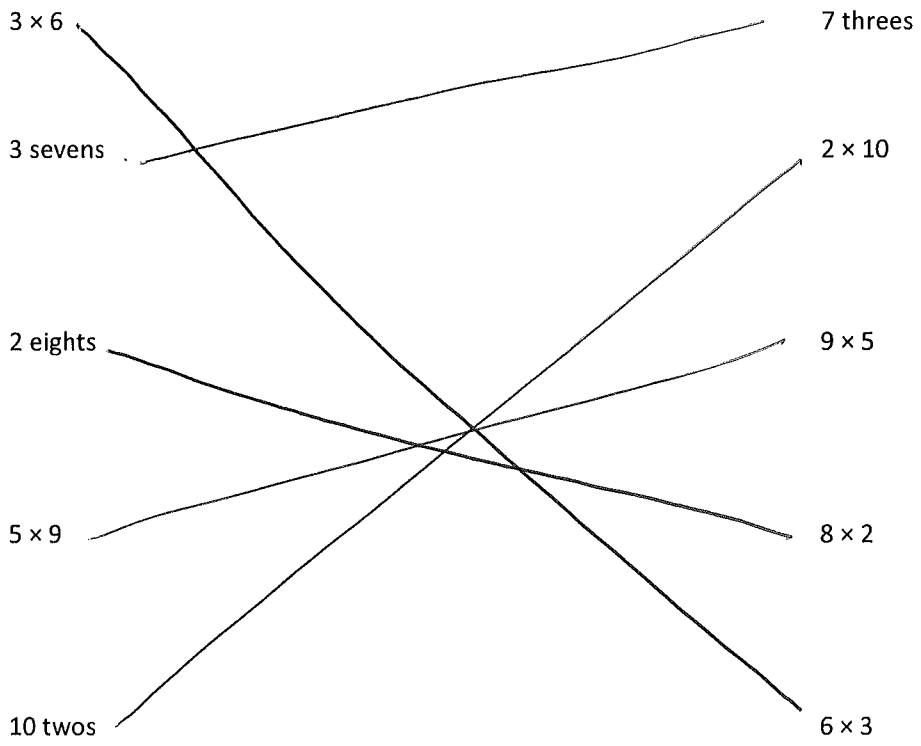
24 = 6 × 4



24 = 3 × 8

24 = 8 × 3

3. Match the expressions.



4. Complete the equations.

a. 2 sixes = 6 twos
= 12

b. 3 × 6 = 6 threes
= 18

c. 4 × 8 = 8 × 4
= 32

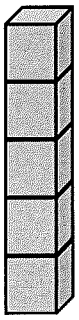
d. 4 × 7 = 7 × 4
= 28

e. 5 twos + 2 twos = 7 × 2
= 14

f. 5 fives + 1 five = 6 × 5
= 30

Name _____ Date _____

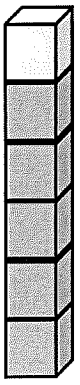
1. Each  has a value of 7.



Unit form: 5 sevens

Facts: 5 × 7 = 7 × 5

Total = 35



Unit form: 6 sevens = 5 sevens + 1 seven

= 35 + 7

= 42

Facts: 6 × 7 = 42

7 × 6 = 42

2. a. Each dot has a value of 8.

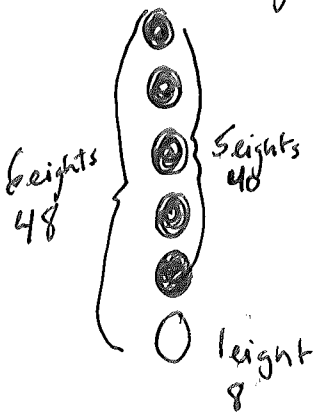
Unit form: 5 eights

Facts: 5 × 8 = 8 × 5

Total: = 40

b. Use the fact above to find 8 × 6. Show your work using pictures, numbers, or words.

6 eights = 5 eights + 1 eight



= 40 + 8
= 48

6 × 8 = 48
8 × 6 = 48 > commutativity - the order doesn't change the product.

3. An author writes 9 pages of her book each week. How many pages does she write in 7 weeks? Use a fives fact to solve.

5 nines
5 × 9 = 45

9 9 9 9 9

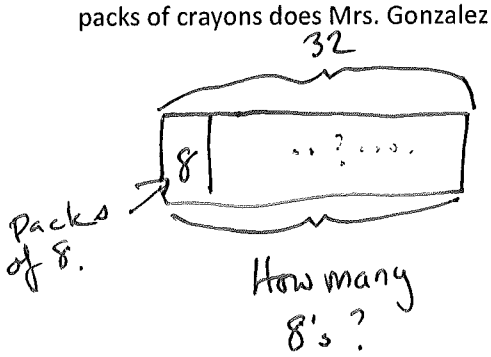
9 9 } 2 nines
2 × 9 = 18

5 nines + 2 nines = 7 nines
45 + 18 = 63
7 × 9 = 63

She will write 63 pages in a week.

45
+ 18
63

4. Mrs. Gonzalez buys a total of 32 crayons for her classroom. Each pack contains 8 crayons. How many packs of crayons does Mrs. Gonzalez buy?



32 ÷ 8 = 4
Mrs Gonzalez buys 4 packs of crayons.

5. Hannah has $500. She buys a camera for $435 and 4 other items for $9 each. Now Hannah wants to buy speakers for $50. Does she have enough money to buy the speakers? Explain.

Spent
4 × $9 = $36

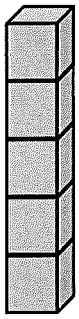
435 camera
+ 36 other items
$ 471 spent

Left
4 9 10
$500 started with
- 471 spent
$ 29 left

Hannah has $29 left. She does not have enough for the speakers.

Name _____ Date _____

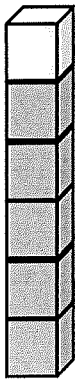
1. Each  has a value of 9.



Unit form: 5 nines

Facts: 5 × 9 = 9 × 5

Total = 45



Unit form: 6 nines = 5 nines + 1 nine

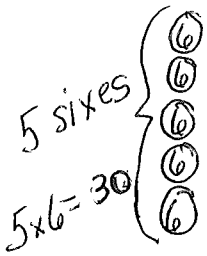
= 45 + 9

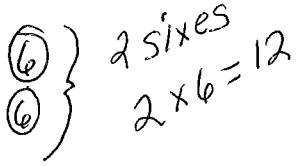
= 54

Facts: 6 × 9 = 54

9 × 6 = 54

2. There are 6 blades on each windmill. How many total blades are on 7 windmills? Use a fives fact to solve.

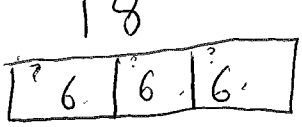




There are 42 total blades on 7 windmills.

5 sixes + 2 sixes = 7 sixes
30 + 12 = 42

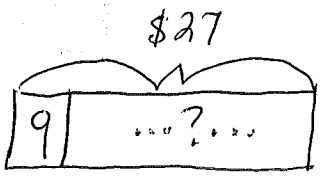
3. Juanita organizes her magazines into 3 equal piles. She has a total of 18 magazines. How many magazines are in each pile?



3x__ = 18
3x6 = 18

There are 6 magazines in each pile.

4. Markuo spends $27 on some plants. Each plant costs $9. How many plants does he buy?



$27 ÷ $9 = 3 or

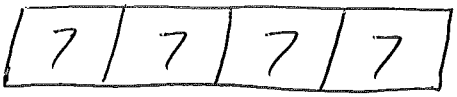
9x__ = 27
9x3 = 27

Markuo buys 3 plants.

3. Pedro buys 4 books at the fair for $7 each.
   a. What is the total amount Pedro spends on 4 books? Use the letter *b* to represent the total amount Pedro spends, and then solve the problem.

$4 \times \$7 = b$

$\$28 = b$



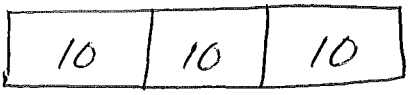
Pedro spends a total of $28.

   b. Pedro hands the cashier 3 ten dollar bills. How much change will he receive? Write an equation to solve. Use the letter *c* to represent the unknown.

3 tens = 30

$\$30 - \$28 = c$

$\$2 = c$



Pedro will receive $2 in change.

4. On field day, the first grade dash is 25 meters long. The third grade dash is twice the distance of the first grade dash. How long is the third grade dash? Use a letter to represent the unknown and solve.

twice = 2 times

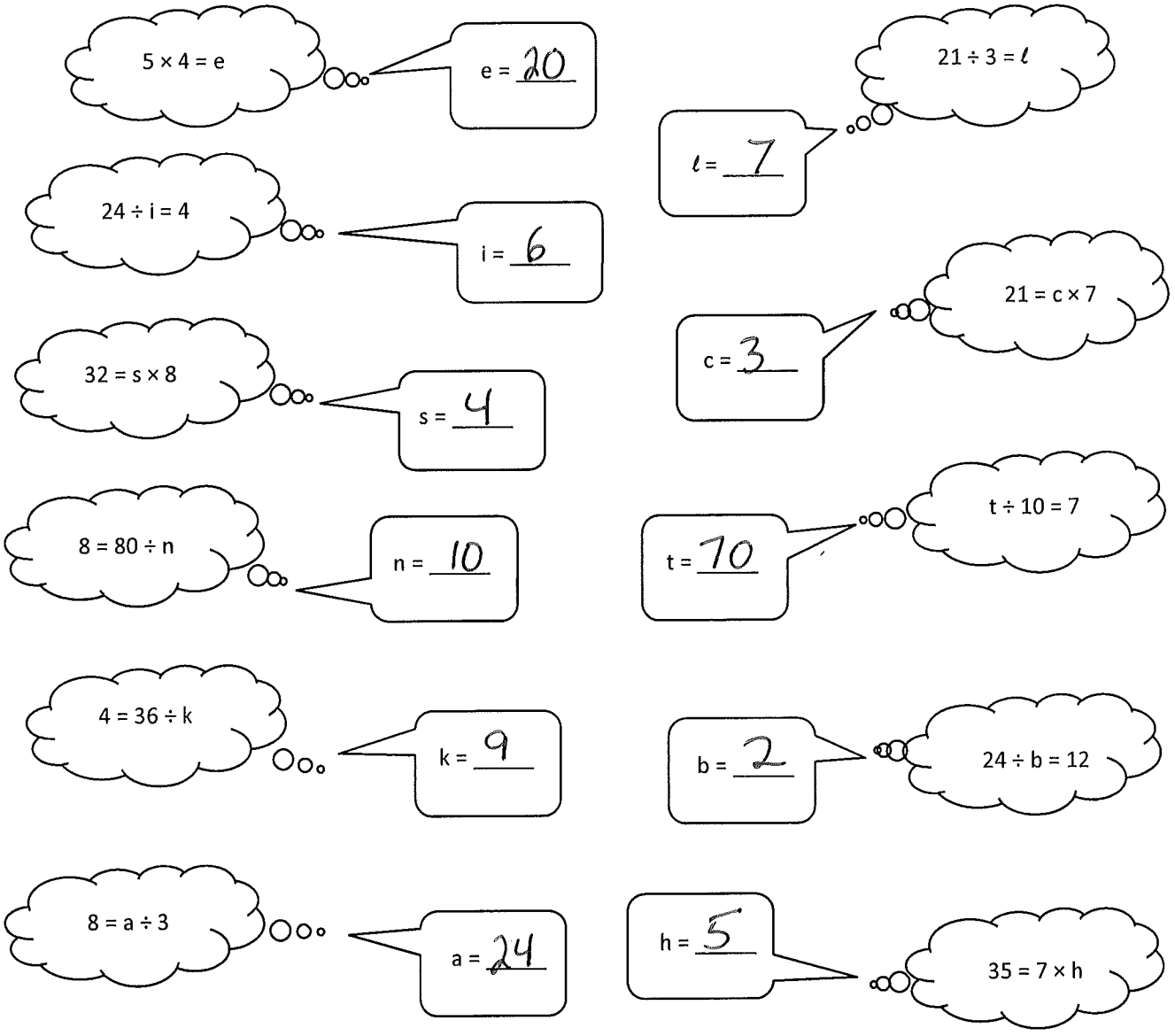
$25 \times 2 = f$

$50 = f$

The third grade dash is 50 meters long.

Name _____ Date _____

1. Each equation contains a letter representing the unknown. Find the value of the unknowns, then write the letters that match the answers to solve the riddle.



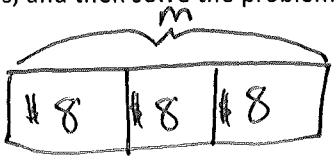
Which tables do you NOT have to learn?

K	i	t	C	h	e	n
9	6	70	3	5	20	10

t	a	b	l	e	s
70	24	2	7	20	4

2. Lonna buys 3 t-shirts for $8 each.

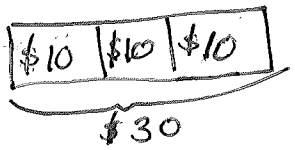
   a. What is the total amount Lonna spends on 3 t-shirts? Use the letter *m* to represent the total amount Lonna spends, and then solve the problem.



$3 \times 8 = m$
$m = \$24$
Lonna spends $24 on t-shirts.

   b. If Lonna hands the cashier 3 ten dollar bills, how much change will she receive? Use the letter *c* to represent the change in an equation, and then find the value of *c*.

$3 \times 10 = 30$



$\$30 - \$24 = c$
$c = \$6$
Lonna will get $6 in change.

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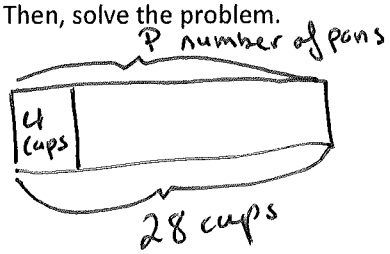
3. Miss Potts used a total of 28 cups of flour to bake some bread. She put 4 cups of flour in each pan. How many pans of bread did she bake? Represent the problem using multiplication and division sentences and a letter for the unknown. Then, solve the problem.

$p \times 4 = 28$
$28 \div 4 = p$
$p = 7$



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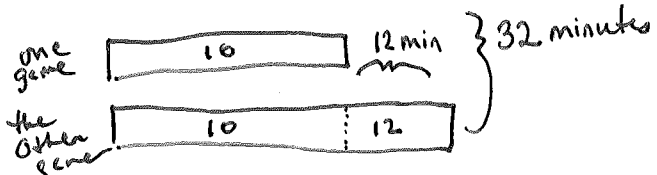
4. At a table tennis tournament, two games went on for a total of 32 minutes. One game took 12 minutes longer than the other. How long did it take to complete each game? Use letters to represent the unknowns. Solve the problem.



$10 + 12 = n$
$22 = n$

$20 \div 2 = g$
$g = 10$

$32 - 12 = 20$ min

CHALLENGE!

One game took 10 minutes. The other took 22 minutes.

Name _____ Date _____

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

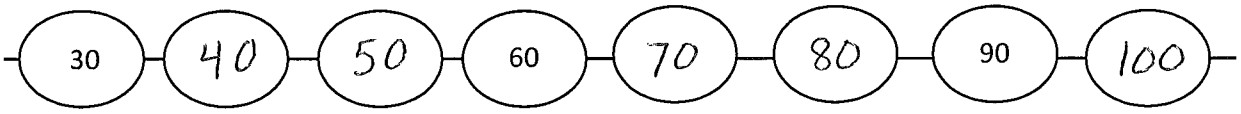
5. Mr. Strand waters his rose bushes for a total of 15 minutes. He waters each rose bush for 3 minutes. How many rose bushes does Mr. Strand water? Represent the problem using multiplication and division sentences and a letter for the unknown. Then, solve the problem.

   3 × 5 = 15

   15 ÷ 3 = 5

Name _____ Date _____

1. a. Complete the pattern.



b. Find the value of the unknown.

10 × 2= d	d = 20	10 × 6 = w	w = 60
3 × 10 = e	e = 30	10 × 7 = n	n = 70
f = 4 × 10	f = 40	g = 8 × 10	g = 80
p = 5 × 10	p= 50		

2. Each equation contains a letter representing the unknown. Find the value of the unknown.

8 ÷ 2 = n	n = 4
3 × a = 12	a = 4
p × 8 = 40	p = 5
18 ÷ 6 = c	c = 3
d × 4= 24	d = 6
h ÷ 7 = 5	h = 35
6 × 3 = f	f = 18
32 ÷ y = 4	y = 8