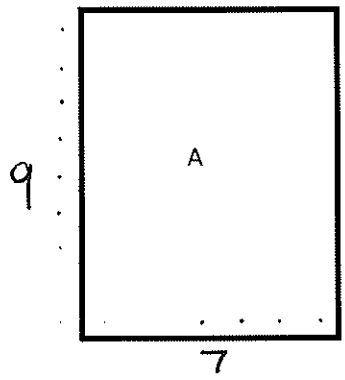
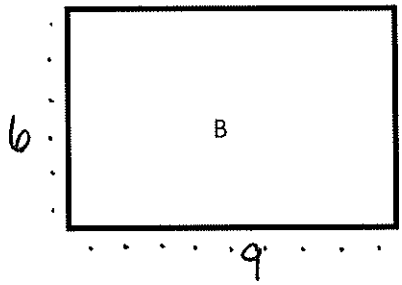
Name Key Date

1. Determine the perimeter and area of rectangles A and B. Include labels.



A = 63 sq. units

P = 32 units

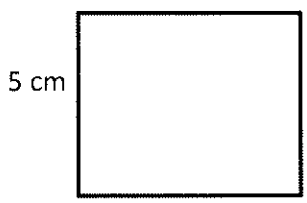


A = 54 sq. units

P = 30 units

2. Determine the perimeter and area of each rectangle. Include labels.

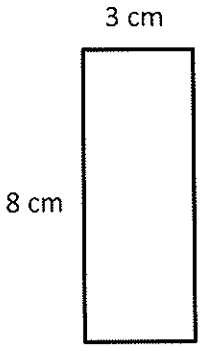
a.



P = 22 cm

A = 30 sq. cm

b.

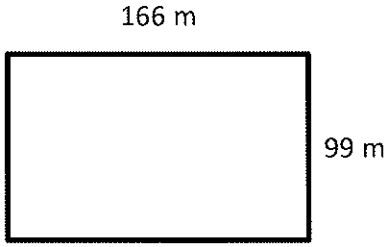


P = 22 cm

A = 24 sq. cm

3. Determine the perimeter of each rectangle. Include labels.

a.

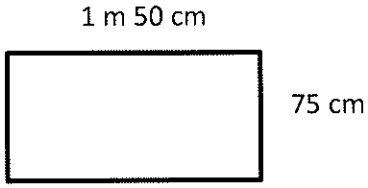


P = 530 m

166 + 99 = 265

265 + 265 = 530

b.



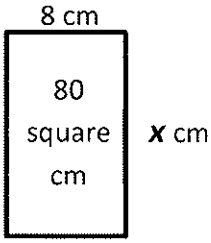
P = 4m 50 cm

1 m 50 cm + 75 cm = 1m 125 cm = 2m 25 cm

2m 25 cm + 2m 25 cm = 4m 50 cm

4. Given the rectangle's area, find the unknown side length. Include labels.

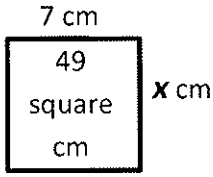
a.



x = 10 cm

8 x ___ = 80 sq. cm

b.

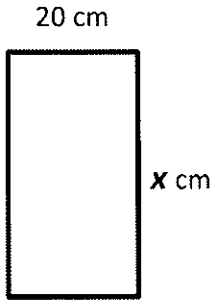


x = 7 cm

7 x ___ = 49 sq. cm

5. Given the rectangle's perimeter, find the unknown side length. Include labels.

a. P = 120 cm

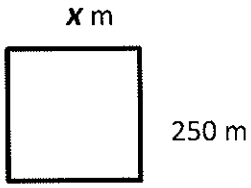


x = 40 cm

20 + 20 + ___ + ___ = 120 cm

120 − 40 = 80 80 ÷ 2 = 40 cm

b. P = 1,000 m



x = 250 m

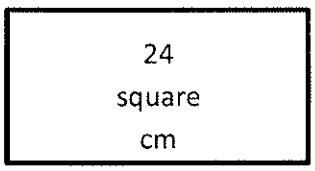
250 + 250 + ___ + ___ = 1,000

1000 − 500 = 500 500 ÷ 2 = 250

6. Each of the following rectangles has whole number side lengths. Given the area **and** perimeter, find the length and width. Include labels.

a. P = 20 cm

l = 6



w = 4

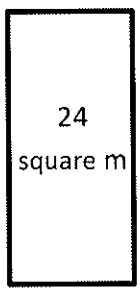
L × w = 24

6 × 4 = 24

L + L + w + w = 20

6 + 6 + 4 + 4 = 20

b. P = 28 m



w = 12

l = 2

L × w = 24

2 × 12 = 24

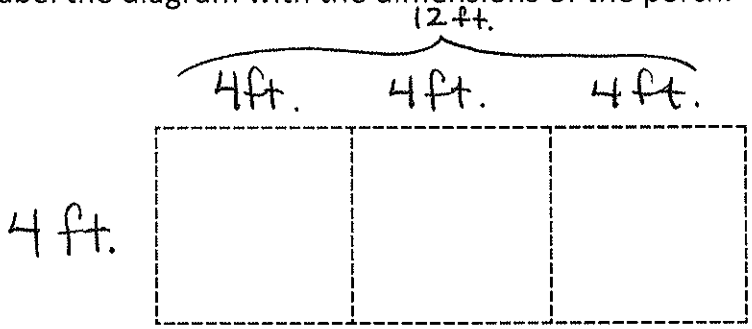
L + L + w + w = 28

2 + 2 + 12 + 12 = 28

Name Key Date

1. A rectangular porch is 4 feet wide. It is 3 times as long as it is wide.

   a. Label the diagram with the dimensions of the porch.



4 + 12 = 16

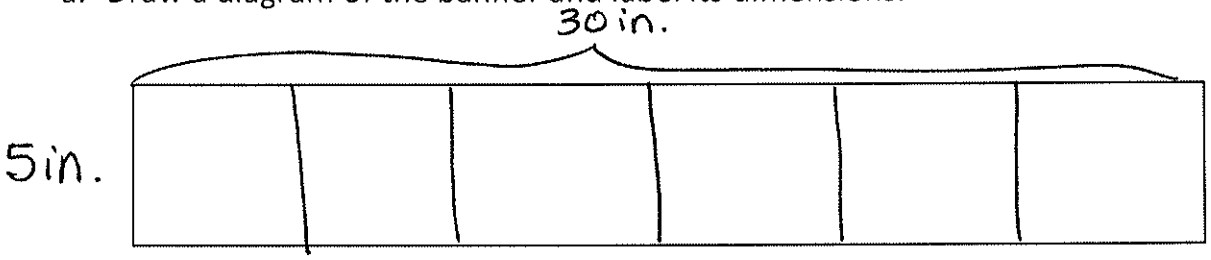
16 × 2 = 32

   b. Find the perimeter of the porch. Include a label.

   P = 32 ft.

2. A narrow rectangular banner is 5 inches wide. It is 6 times as long as it is wide.

   a. Draw a diagram of the banner and label its dimensions.



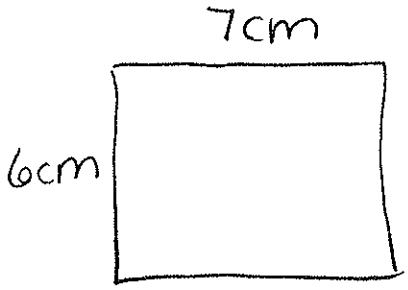
   b. Find the perimeter **and** area of the banner. P = 70 in. A = 150 sq. in.

30 + 5 = 35

35 × 2 = 70

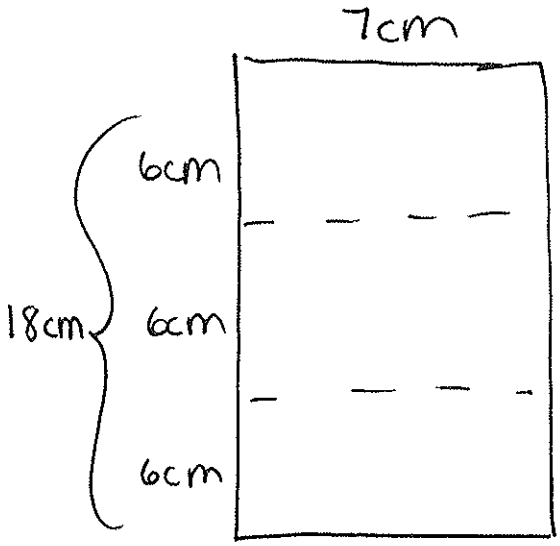
5 × 30 = 150

3. The area of a rectangle is 42 square centimeters. Its length is 7 centimeters. Draw and label this rectangle.



a. What is the width of the rectangle? W = 6cm

b. Charlie wants to draw a second rectangle that is the same length but is 3 times as wide. Draw and label Charlie's second rectangle.



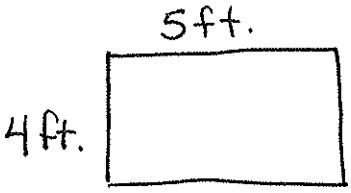
c. What is the perimeter of Charlie's second rectangle? P = 50 cm

18 + 7 = 25

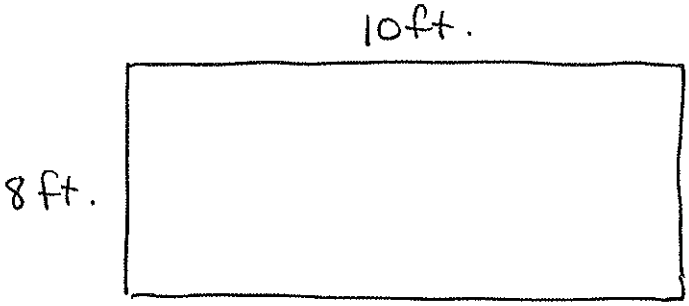
25 x 2 = 50

4. The area of Betsy's rectangular sandbox is 20 square feet. The longer side measures 5 feet. The sandbox at the park is twice as long and twice as wide as Betsy's.

   a. Draw and label a diagram of Betsy's sandbox. What is its perimeter? P= 18 ft.



   b. Draw and label a diagram of the sandbox at the park. What is its perimeter? P = 36 ft.



   c. What is the relationship between the two perimeters?

   The park's sandbox perimeter is twice Betsy's.

   d. Find the area of the park's sandbox using the formula $A = l \times w$.

   Area of the park's sandbox = 10 x 8 = 80 sq. ft.

   e. The sandbox at the park has an area that is how many times that of Betsy's sandbox?

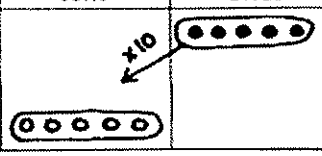
   The sandbox area = 4 times the area of Betsy's sandbox.

Name Key Date _____

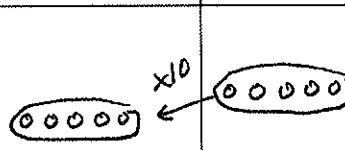
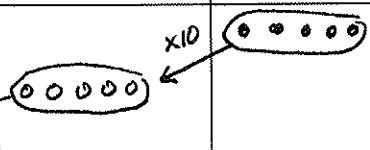
Example:

5 × 10 = 50

5 ones × 10 = 5 tens

thousands	hundreds	tens	ones
			

1. Draw number disks and arrows as shown to represent each product.

thousands	hundreds	tens	ones
			

a. 5 × 100 = 500

5 × 10 × 10 = 500

5 ones × 100 = 5 hundreds

thousands	hundreds	tens	ones
			

b. 5 × 1,000 = 5,000

5 × 10 × 10 × 10 = 5,000

5 ones × 1,000 = 5 thousands

thousands	hundreds	tens	ones

2. Complete the following equations. Use the place value chart if needed.

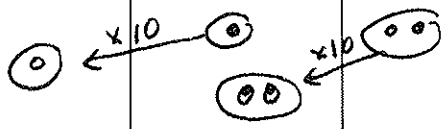
a. 6 × 10 = 60 b. 100 × 6 = 600 c. 6,000 = 6 × 1,000

d. 10 × 4 = 40 e. 4 × 100 = 400 f. 1,000 × 4 = 4,000

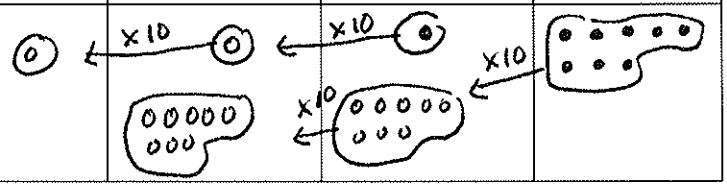
g. 1,000 × 9 = 9,000 h. 90 = 10 × 9 i. 900 = 9 × 100

3. Draw number disks and arrows as shown to represent each product.

a. 12 × 10 = 120 (1 ten 2 ones) × 10 = 120

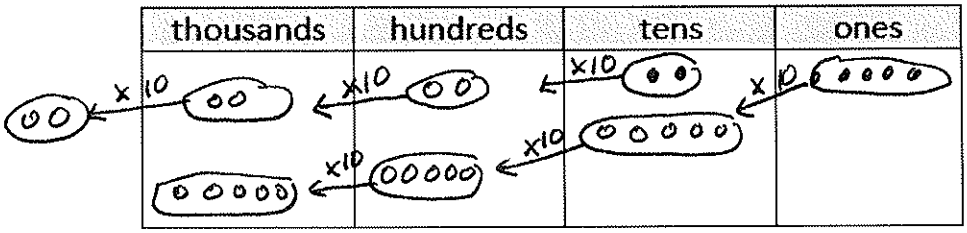
thousands	hundreds	tens	ones
			

b. 18 × 100 = 1,800 18 × 10 × 10 = 1,800 (1 ten 8 ones) × 100 = 1,800

thousands	hundreds	tens	ones
			

c. $25 \times 1{,}000 =$ 25,000 $25 \times 10 \times 10 \times 10 =$ 25,000

(2 tens 5 ones) × 1,000 = 25 thousands



4. Decompose each multiple of 10, 100, or 1,000 before multiplying.

a. $3 \times 40 = 3 \times 4 \times$ 10
$= 12 \times$ 10
$=$ 120

c. $3 \times 200 = 3 \times$ 2 × 100
$=$ 6 × 100
$=$ 600

b. $4 \times 4{,}000 =$ 4 × 4 × 1000
$=$ 16 × 1000
$=$ 16,000

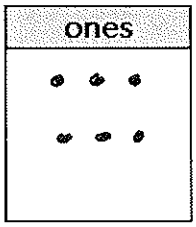
d. $5 \times 4{,}000 =$ 5 × 4 × 1000
$=$ 20 × 1000
$=$ 20,000

Name Key Date

Draw number disks to represent the value of the following expressions.

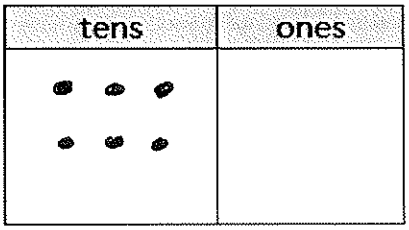
1. $2 \times 3 =$ 6

   2 times 3 ones is 6 ones.



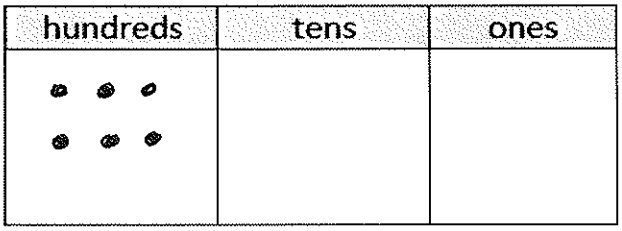
2. $2 \times 30 =$ 60

   2 times 3 tens is 6 tens.



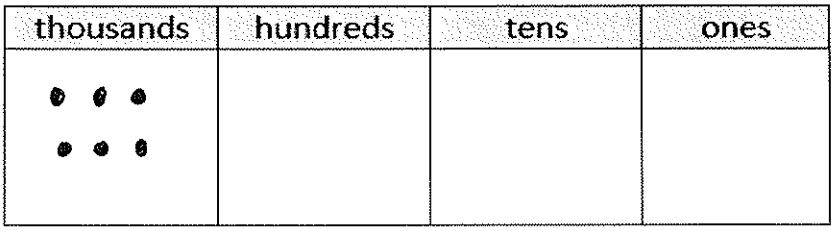
3. $2 \times 300 =$ 600

   2 times 3 hundreds is 6 hundreds.



4. $2 \times 3{,}000 =$ 6,000

   2 times 3 thousands is 6 thousands.



5. Find the products.

a. $20 \times 7 =$ 140	b. $3 \times 60 =$ 180	c. $3 \times 400 =$ 1,200	d. $2 \times 800 =$ 1,600
e. $7 \times 30 =$ 210	f. $60 \times 6 =$ 360	g. $400 \times 4 =$ 1,600	h. $4 \times 8{,}000 =$ 32,000
i. $5 \times 30 =$ 150	j. $5 \times 60 =$ 300	k. $5 \times 400 =$ 2,000	l. $8{,}000 \times 5 =$ 40,000

6. Brianna bought 3 packs of balloons for a party. Each pack has 60 balloons. How many balloons does Brianna have? $3 \times 60 = 180$

Brianna has 180 balloons.

7. Jordan has twenty times as many baseball cards as his brother. His brother has 9 cards. How many cards does Jordan have? $20 \times 9 = 180$

Jordan has 180 baseball cards.

8. The aquarium has 30 times as many fish in one tank as Jacob has. Jacob has 9 fish. How many fish does the aquarium have? $30 \times 9 = 270$

The aquarium has 270 fish.

Name Key Date

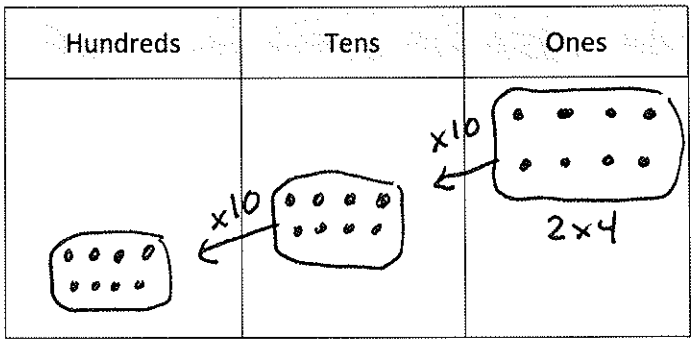
Represent the following problem by drawing disks in the place value chart.

1. To solve 20 × 40, think:

   (2 tens) × (4 tens) =

   2 × 4 × 10 x 10 =

   20 × 40 = 800



2. Use the word form of the numbers to find the products.

   a. 2 tens × 4 tens = 8 hundreds

   20 x 40 = 800

   b. 3 tens × 4 tens = 12 hundreds

   30 × 40 = 1,200

   c. 2 tens × 5 tens = 10 hundreds

   20 × 50 = 1,000

   d. 4 tens x 8 tens = 32 hundreds

   40 x 80 = 3,200

3. Rewrite each equation in unit form and solve.

a. 20 x 20 = 400

2 tens x 2 tens = 4 hundreds

b. 60 x 20 = 1,200

6 tens x 2 tens = 12 hundreds

c. 70 x 20 = 1,400

7 tens x 2 tens = 14 hundreds

d. 70 x 30 = 2,100

7 tens x 3 tens = 21 hundreds

e. 40 x 50 = 2,000

4 tens x 5 tens = 20 hundreds

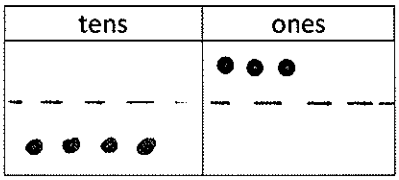
f. 30 x 60 = 1,800

3 tens x 6 tens = 18 hundreds

Name Key Date _____

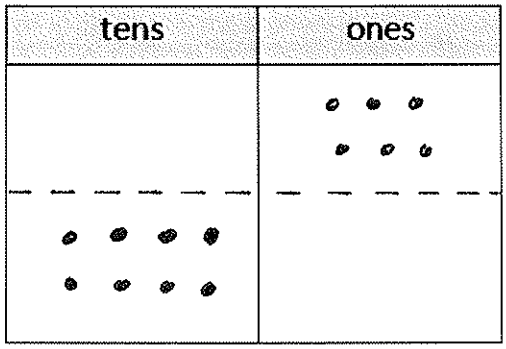
1. Show partial products with disks on the place value chart, and record the partial products vertically as shown below.

a. 1×43



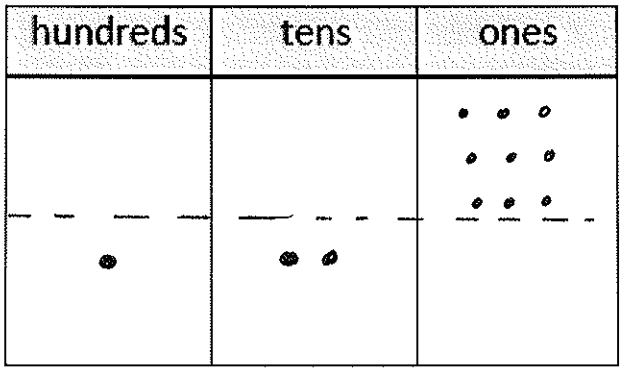
$$\begin{array}{r} 43 \\ \times \quad 1 \\ \hline 3 \quad (1 \times 3) \\ +\,40 \quad (1 \times 40) \\ \hline 43 \end{array}$$

b. 2×43



$$\begin{array}{r} 43 \\ \times \quad 2 \\ \hline 6 \quad (2 \times 3) \\ +\,80 \quad (2 \times 40) \\ \hline 86 \end{array}$$

c. 3×43



$$\begin{array}{r} 43 \\ \times \quad 3 \\ \hline 9 \quad (3 \times 3) \\ +\,120 \quad (3 \times 40) \\ \hline 129 \end{array}$$

d. 4×43

hundreds	tens	ones
•	• • • • • •	• •

4 3

x 4
12 (4 x 3)
+ 160 (4 x 40)
172

e. 2×36

hundreds	tens	ones
	• • • • •	• •

3 6

x 2
12 (2 x 6)
+60 (2 x 30)
72

f. 3×69

hundreds	tens	ones
	• • • • • •	• • • • •

6 9

x 3
27 (3 x 9)
+ 180 (3 x 60)
207

Name Key Date

1. Represent the following expressions with disks that match the partial products.

a. 1×213

hundreds	tens	ones
		•••
	•	
••		

$$\begin{array}{r} 213 \\ \times \quad 1 \\ \hline 3 \quad (1\times 3) \\ 10 \quad (1\times 10) \\ +\ 200 \quad (1\times 200) \\ \hline 213 \end{array}$$

b. 2×213

hundreds	tens	ones
		••• •••
	••	
••		

$$\begin{array}{r} 213 \\ \times \quad 2 \\ \hline 6 \quad (2\times 3) \\ 20 \quad (2\times 10) \\ +\ 400 \quad (2\times 200) \\ \hline 426 \end{array}$$

c. 3×214

thousands	hundreds	tens	ones
		•	••
		•••	
	••• •••		

$$\begin{array}{r} 214 \\ \times \quad 3 \\ \hline 12 \quad (3\times 4) \\ 30 \quad (3\times 10) \\ +\ 600 \quad (3\times 200) \\ \hline 642 \end{array}$$

d. $3 \times 1{,}254$

thousands	hundreds	tens	ones
		•	• •
	•	• • • •	
	• • • • •		
• • •			

$$
\begin{array}{r}
1\ 2\ 5\ 4 \\
\times \qquad 3 \\
\hline
\qquad 1\ 2 \quad (3 \times 4) \\
\quad 1\ 5\ 0 \quad (3 \times 50) \\
\quad 6\ 0\ 0 \quad (3 \times 200) \\
+\ 3\ 0\ 0\ 0 \quad (3 \times 1000) \\
\hline
3{,}7\ 6\ 2
\end{array}
$$

e. $2 \times 4{,}036$

thousands	hundreds	tens	ones
		•	• •
		• • • • •	
• • • • • •			

$$
\begin{array}{r}
4\ 0\ 3\ 6 \\
\times \qquad 2 \\
\hline
\qquad 1\ 2 \quad (2 \times 6) \\
\quad 6\ 0 \quad (2 \times 30) \\
\qquad 0 \quad (2 \times 0) \\
+\ 8\ 0\ 0\ 0 \quad (2 \times 4000) \\
\hline
8\ 0\ 7\ 2
\end{array}
$$

f. $3 \times 2{,}546$

thousands	hundreds	tens	ones
		•	• • • • • • •
	•	• •	
•	• • • • •		
• • • • • •			

$$
\begin{array}{r}
2\ 5\ 4\ 6 \\
\times \qquad 3 \\
\hline
\qquad 1\ 8 \quad (3 \times 6) \\
\quad 1\ 2\ 0 \quad (3 \times 40) \\
1\ 5\ 0\ 0 \quad (3 \times 500) \\
6\ 0\ 0\ 0 \quad (3 \times 2000) \\
\hline
7\ 6\ 3\ 8
\end{array}
$$

Name Key Date _____

1. Solve the following expressions using the partial products method, and the area model.

a. 4 x 425

425
x 4
20
80
+ 1600
1,700

4	400	20	5
	1600	80	20

b. 7 x 534

534
x 7
28
210
+ 3500
3,738

7	500	30	4
	3500	210	28

c. 8 x 209

209
x 8
72
0
1600
1,672

8	200	0	9
	1600	0	72

2. Solve using the partial products and area model method. Kayla's school has 258 students. Janet's school has 3 times as many students as Kayla's. How many students are in Janet's school?

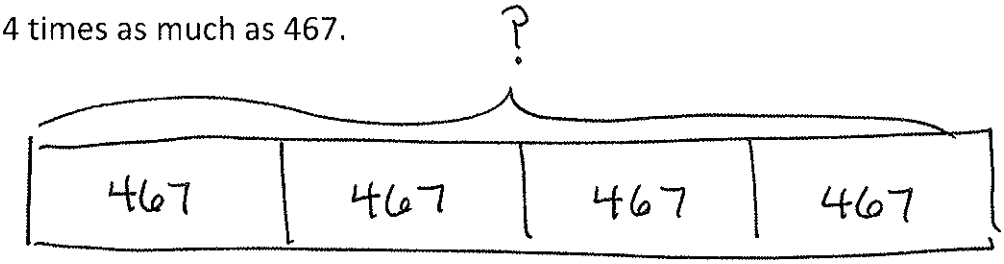
$$\begin{array}{r} 258 \\ \times\ 3 \\ \hline 24 \\ 150 \\ +\ 600 \\ \hline 774 \end{array}$$

	200	50	8
3	600	150	24

Janet's school has 774 students.

3. Model with a tape diagram and solve any way.

4 times as much as 467.



$$\begin{array}{r} 467 \\ \times\ 4 \\ \hline 28 \\ 240 \\ 1600 \\ \hline 1,868 \end{array}$$

Solve any way.

4. 531 × 7

531
× 7
7
210
3500
3,717

7	500	30	1
	3500	210	7

5. 3 times as many as 2,805.

2,805
× 3
15
0
2400
6000
8,415

3	2000	800	0	5
	6000	2400	0	15

6. A restaurant sells 925 pounds of spaghetti and 725 pounds of linguini every month. After 9 months, how many pounds of pasta does the restaurant sell? Write your answer as a statement.

925
× 9
45
180
+ 8100
8,325
spaghetti

725
× 9
45
180
6300
6,525
linguini

8325
+ 6525
14,850

The restaurant sells 14,850 pounds of pasta in 9 months.

Name Key Date

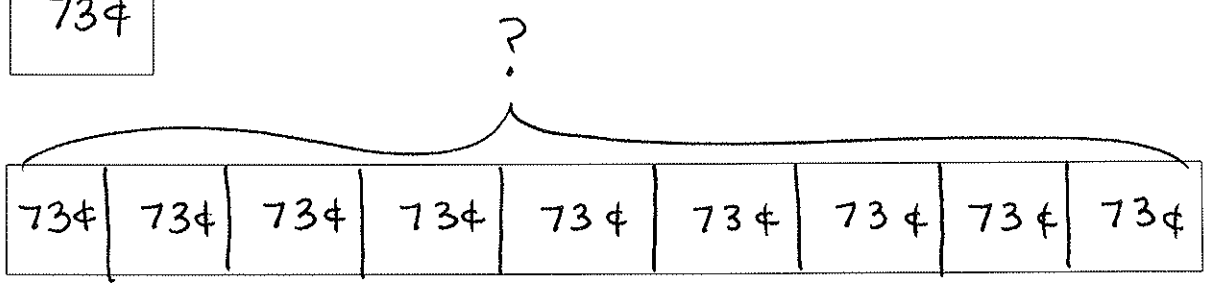
1. The table shows the cost of party favors. Each party guest receives a bag with 1 balloon, 1 lollipop, and 1 bracelet. What is the total cost for 9 guests?

Item	Cost
1 balloon	26¢
1 lollipop	14¢
1 bracelet	33¢

73 ¢

1 guest | 73¢ |

9 guests



73
× 9
27
+ 630
657

The total cost for 9 guests is $6.57.

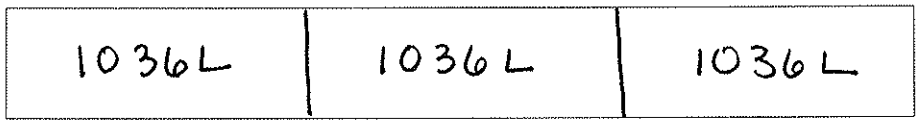
2. The Turner family uses 148 liters of water per day. The Hill family uses 3 times as much water per day. How much water does the Hill family use per week?

Turner Family One Week | 1036 L |

148
× 7
56
280
+ 700
1036

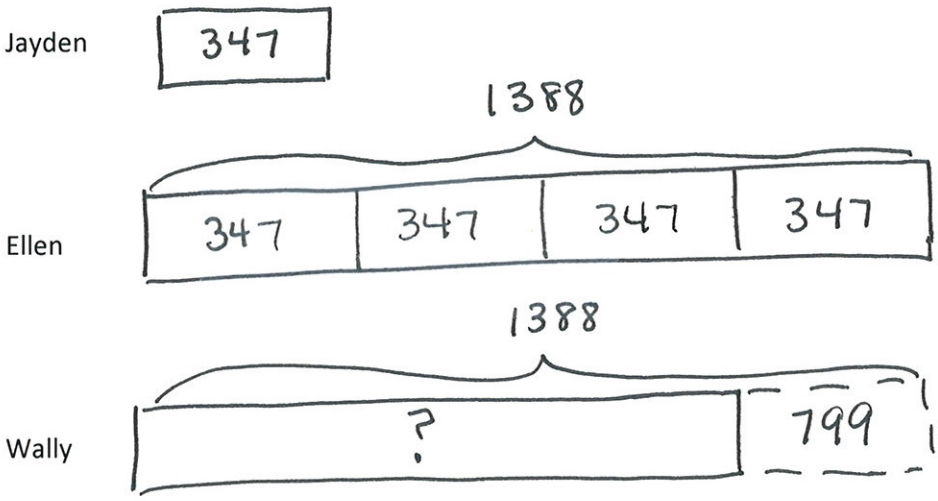
1036
× 3
18
90
3000
3,108

Hill Family One Week



The Hill family uses 3,108 L of water per week.

3. Jayden has 347 marbles. Ellen than 4 times as many as Jayden. Wally has 799 fewer than Ellen. How many marbles does Wally have?

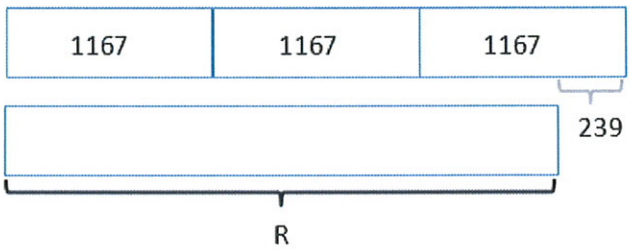


$$\begin{array}{r} 347 \\ \times\ 4 \\ \hline 28 \\ 160 \\ 1200 \\ \hline 1388 \end{array}$$

$$\begin{array}{r} 1388 \\ -\ 800 \\ \hline 588 \end{array} \quad 588 + 1 = 589$$

Wally has 589 marbles.

4. Write a word problem that would go with this drawing. Include a solution.



(Various) R = 3,262

Name Key Date

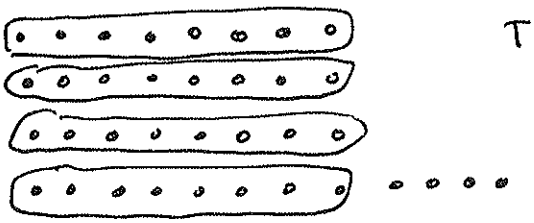
Solve the following problems using arrays.

1. There are 19 identical socks. How many pairs of socks are there? Will there be any socks without a match? If so, how many?

There will be 9 pairs of socks with one left over.

2. If it takes 8 inches of ribbon to make a bow, how many bows can be made from 3 feet of ribbon (1 foot = 12 inches)? Will any ribbon be left over? If so, how much?

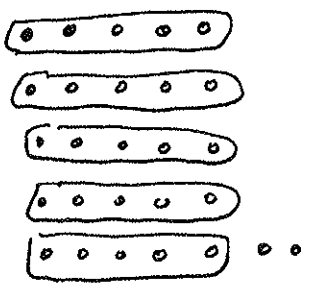
3ft. = 36in.



Four bows can be made.

There will be 4 inches of ribbon left over.

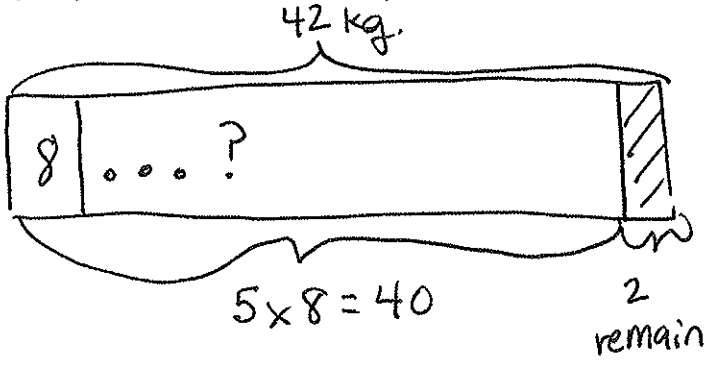
3. The library has 27 chairs and 5 tables. If the same number of chairs are placed at each table, how many chairs can be placed at each table? Will there be any extra chairs? If so, how many?



You can put 5 chairs at each table. There will be 2 extra chairs.

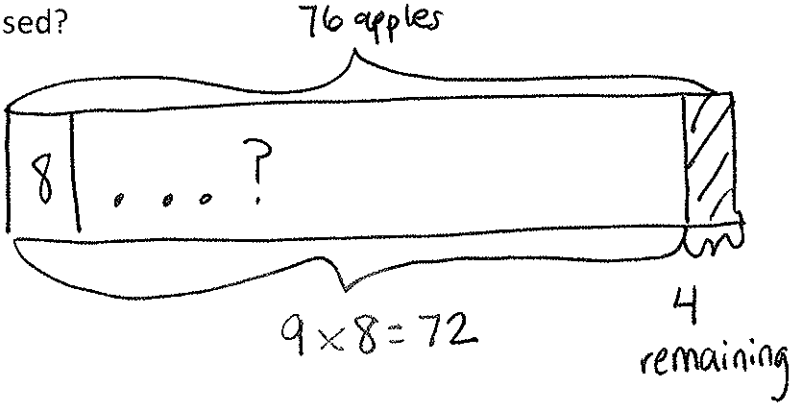
Solve using tape diagrams.

4. The baker has 42 kilograms of flour. She uses 8 kilograms each day. After how many days will she need to buy more flour?



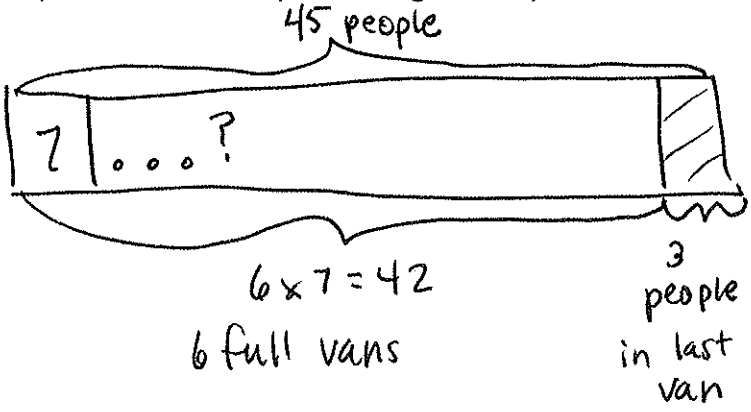
She will need to buy more flour after 5 days because she will only have 2 kg left.

5. Caleb has 76 apples. He wants to bake as many pies as he can. If it takes 8 apples to make each pie, how many apples will he use? How many apples will not be used?



Caleb will use 72 apples for 9 pies. He will have 4 apples left.

6. Forty-five people are going to the beach. Seven people can ride in each van. How many vans will be required to get everyone to the beach?

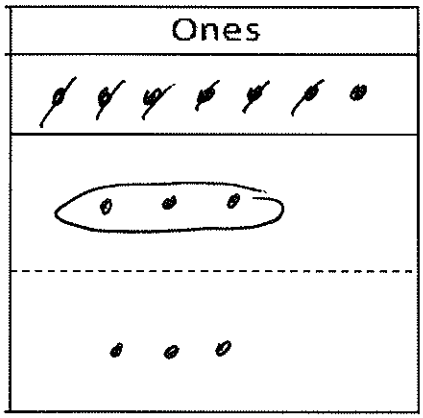


They will need 7 vans to get everyone to the beach.

Name Key LESSON 16 PROBLEM SET

Show the division using disks. Check your quotient and remainder by using multiplication and addition.

1. $7 \div 2$



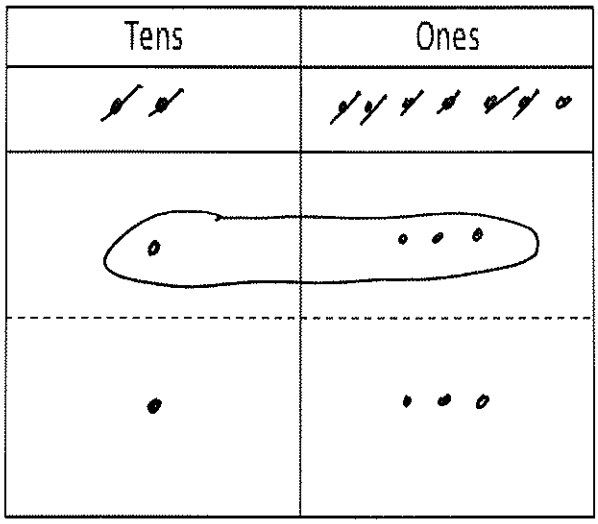
quotient = 3

remainder = 1

Check Your Work

$$\begin{array}{r} 3 \\ \times\ 2 \\ \hline 6 \\ +\ 1 \\ \hline 7 \end{array}$$

2. $27 \div 2$



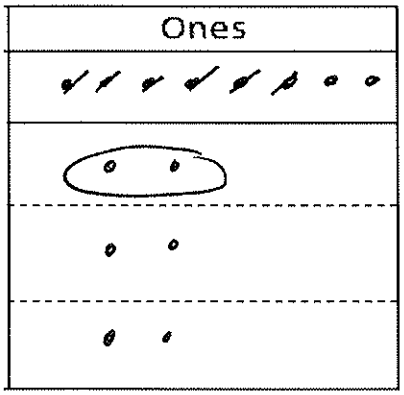
quotient = 13

remainder = 1

Check Your Work

$$\begin{array}{r} 13 \\ \times\ 2 \\ \hline 26 \\ +\ 1 \\ \hline 27 \end{array}$$

3. $8 \div 3$



quotient = 2

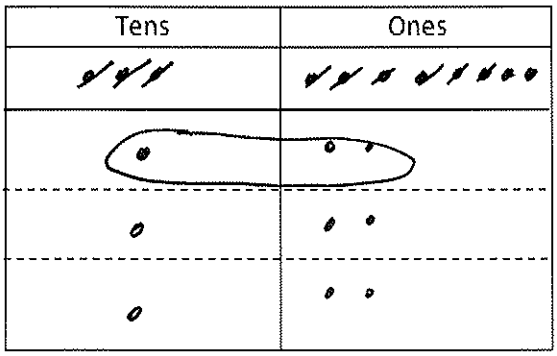
remainder = 2

Check Your Work

$3 \times 2 = 6$

$6 + 2 = 8$

4. $38 \div 3$



quotient = 12

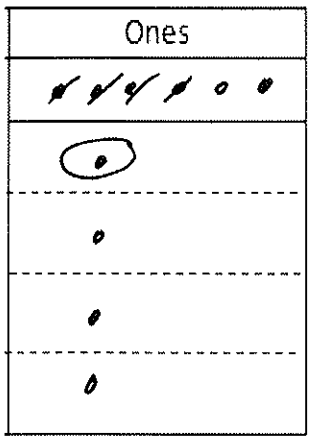
remainder = 2

Check Your Work

$12 \times 3 = 36$

$36 + 2 = 38$

5. $6 \div 4$



quotient = 1

remainder = 2

Check Your Work

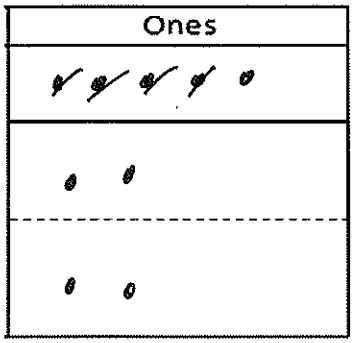
$4 \times 1 = 4$

$4 + 2 = 6$

Name Key Date _____

Show the division using disks. Check your quotient and remainder by using multiplication and addition.

1. $5 \div 2$



quotient = 2

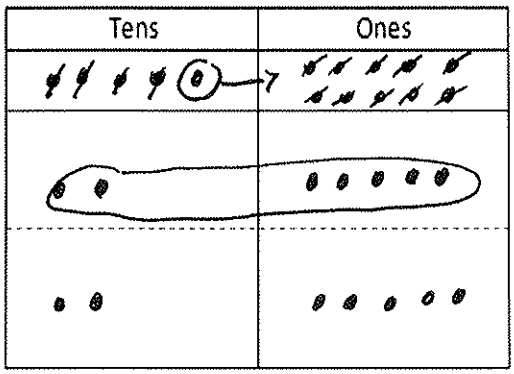
remainder = 1

Check Your Work

$2 \times 2 = 4$

$4 + 1 = 5$

2. $50 \div 2$



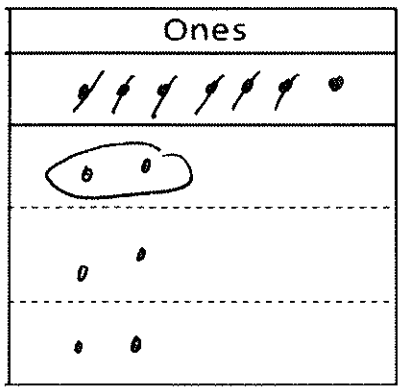
quotient = 25

remainder = 0

Check Your Work

$25 \times 2 = 50$

3. $7 \div 3$



quotient = 2

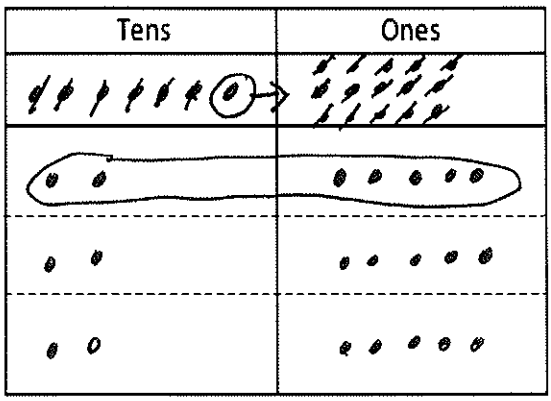
remainder = 1

Check Your Work

$3 \times 2 = 6$

$6 + 1 = 7$

4. $75 \div 3$



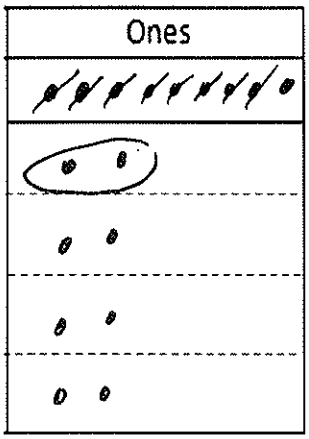
quotient = 25

remainder = 0

Check Your Work

$$\begin{array}{r} 25 \\ \times\ 3 \\ \hline 75 \end{array}$$

5. $9 \div 4$



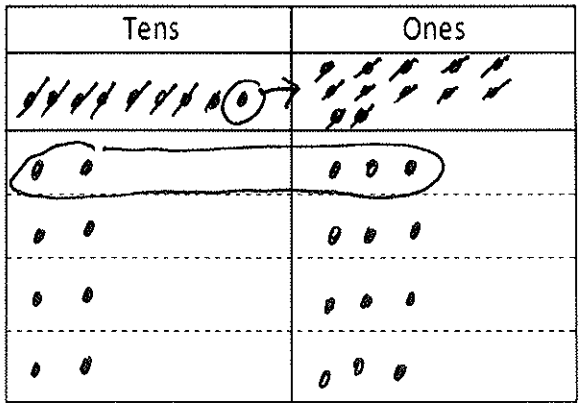
quotient = 2

remainder = 1

Check Your Work

$$\begin{array}{r} 4 \\ \times\ 2 \\ \hline 8 \\ +\ 1 \\ \hline 9 \end{array}$$

6. $92 \div 4$



quotient = 23

remainder = 0

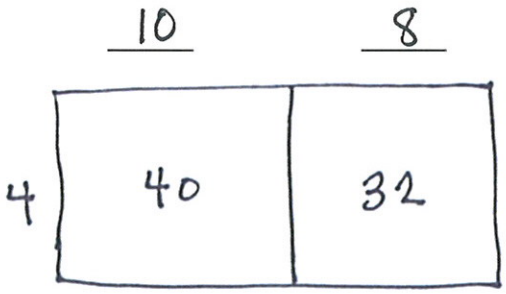
Check Your Work

$$\begin{array}{r} 23 \\ \times\ 4 \\ \hline 12 \\ +\ 80 \\ \hline 92 \end{array}$$

} partial product

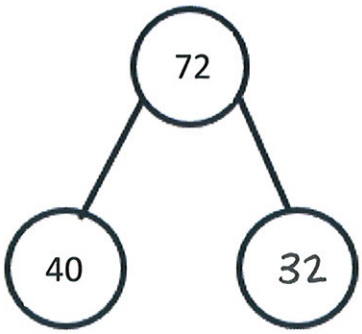
Name Key Date

1. Alfred solved a multiplication problem by drawing an area model, but he left off the length measurements along the top. Can you figure out the missing measurements?



4 x 18 = 72

a. Show a number bond to represent Alfred's area model.



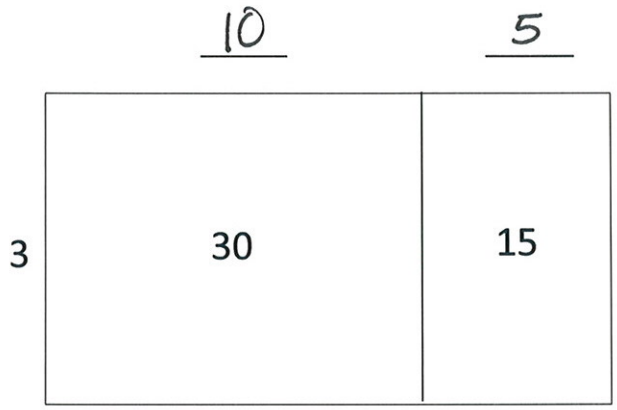
(4 x 10) + (4 x 8)

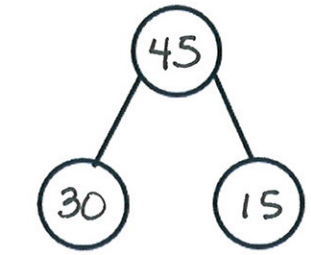
= 40 + 32

= 72

2. Fill in the missing lengths on the area models and complete the number bond.

a.



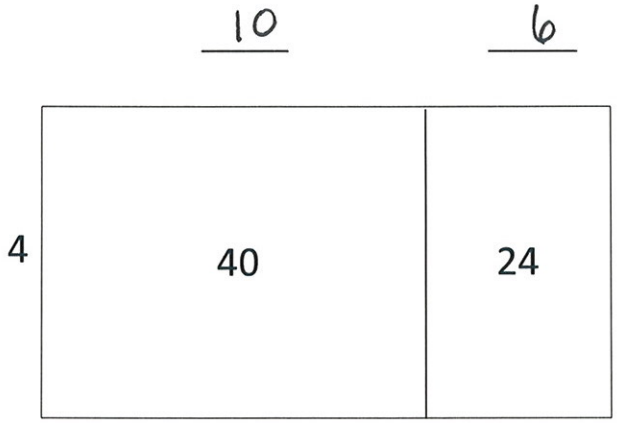


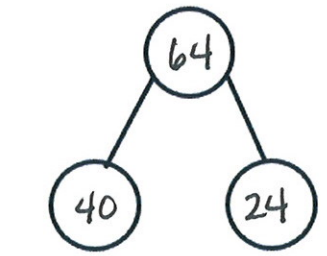
(3 x 10) + (3 x 5)

= 30 + 15

= 45

b.



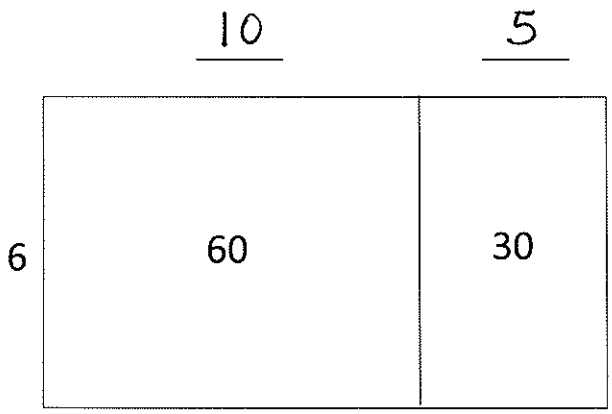


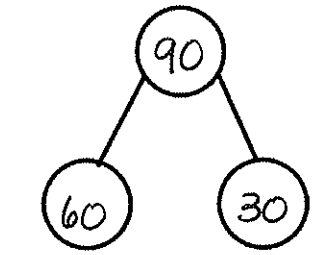
(4 x 10) + (4 x 6)

= 40 + 24

= 64

c.



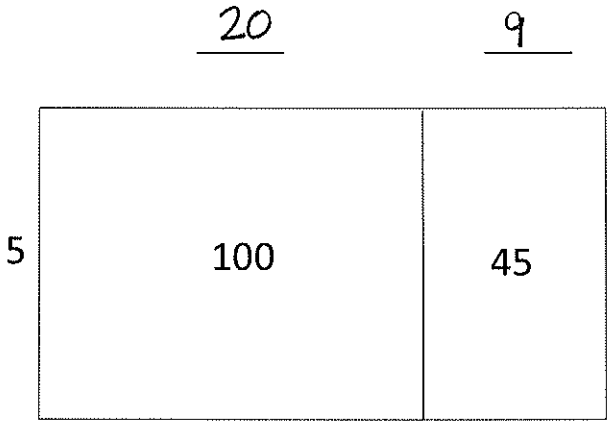


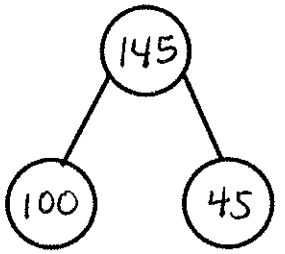
(6 x 10) + (6 x 5)

= 60 + 30

= 90

d.





(5 x 20) + (5 x 9)

= 100 + 45

= 145

Name Key Date

1. Record the factors of the given numbers as multiplication sentences and as a list in order from least to greatest. Classify each as prime (P) or composite (C). The first problem is done for you.

	Multiplication Sentences	Factors	P or C
a.	4 $1 \times 4 = 4$ $2 \times 2 = 4$	The factors of 4 are: 1,2, and 4	C
b.	6 1×6 2×3	The factors of 6 are: 1, 2, 3, 6	C
c.	7 1×7	The factors of 7 are: 1, 7	P
d.	9 1×9 3×3	The factors of 9 are: 1, 3, 9	C
e.	12 1×12 2×6 3×4	The factors of 12 are: 1, 2, 3, 4, 6	C
f.	13 1×13	The factors of 13 are: 1, 13	P
g.	15 1×15 3×5	The factors of 15 are: 1, 3, 5, 15	C
h.	16 1×16 2×8 4×4	The factors of 16 are: 1, 2, 4, 8, 16	C

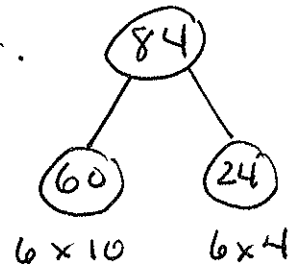
i.	18 1 x 18 2 x 9 3 x 6	The factors of 18 are: 1, 2, 3, 6, 9	C
j.	19 1 x 19	The factors of 19 are: 1, 19	P
k.	21 1 x 21 3 x 7	The factors of 21 are: 1, 3, 7, 21	C
l.	24 1 x 24 4 x 6 2 x 12 3 x 8	The factors of 24 are: 1, 2, 3, 4, 6, 8, 12, 24	C

2. Sheila has 28 stickers to divide evenly among 3 friends. She thinks there will be no leftovers. Use what you know about factor pairs to explain if Sheila is correct.

There will be leftovers because 9 groups of 3 is 27, so there would be one sticker left.

Name Key Date

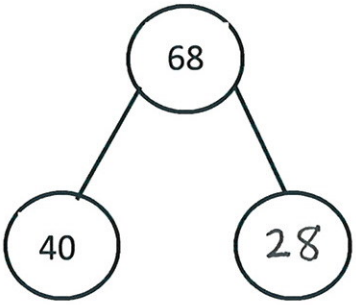
1. Explain your thinking or use division to answer the following.

a. Is 2 a factor of 84? Yes $2 \times 42 = 84$	b. Is 2 a factor of 83? No. It is odd.
c. Is 3 a factor of 63? Yes. $3 \times 21 = 63$	d. Is 2 a factor of 92? Yes, it is even.
e. Is 6 a factor of 84? Yes. 	f. Is 4 a factor of 88? Yes. $4 \times 22 = 88$
g. Is 5 a factor of 84? No. 84 does not end in 0 or 5.	h. Is 8 a factor of 92? No. $8 \times 11 = 88$ $8 \times 12 = 96$

Name Key Date

1. Use number bonds to divide greater numbers.

a.



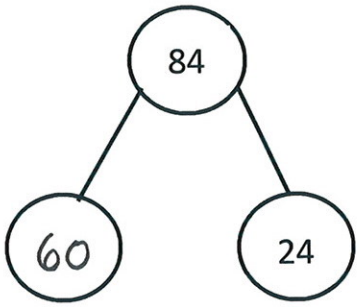
(40 ÷ 4) + (28 ÷ 4)

= 10 + 7

= 17

68 ÷ 4 = 17

b.



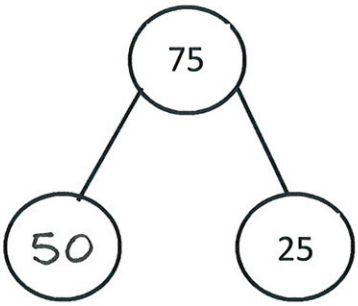
(60 ÷ 6) + (24 ÷ 6)

= 10 + 4

= 14

84 ÷ 6 = 14

c.



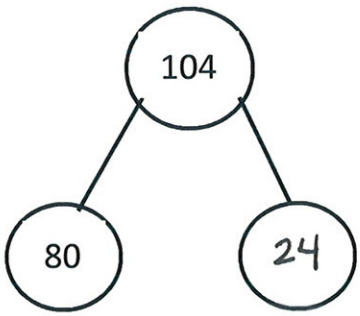
(50 ÷ 5) + (25 ÷ 5)

= 10 + 5

= 15

75 ÷ 5 = 15

d.



(80 ÷ 8) + (24 ÷ 8)

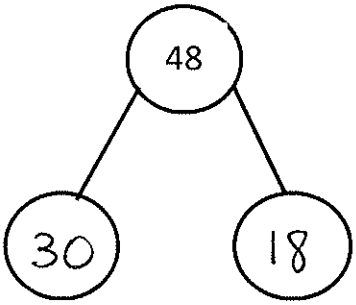
= 10 + 3

= 13

104 ÷ 8 = 13

2. Decompose the whole into multiples of the divisor to complete the number bonds.

a.



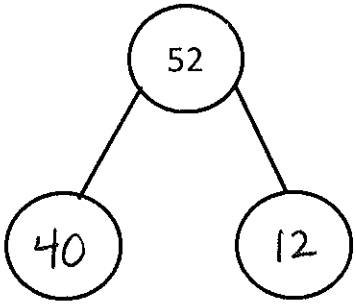
(30 ÷ 3) + (18 ÷ 3)

= 10 + 6

= 16

48 ÷ 3 = 16

b.



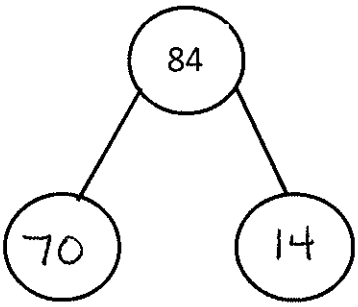
(40 ÷ 4) + (12 ÷ 4)

= 10 + 3

= 13

52 ÷ 4 = 13

c.



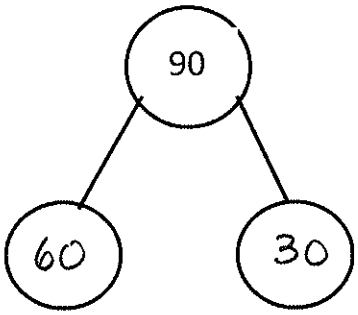
(70 ÷ 7) + (14 ÷ 7)

= 10 + 2

= 12

84 ÷ 7 = 12

d.



(60 ÷ 6) + (30 ÷ 6)

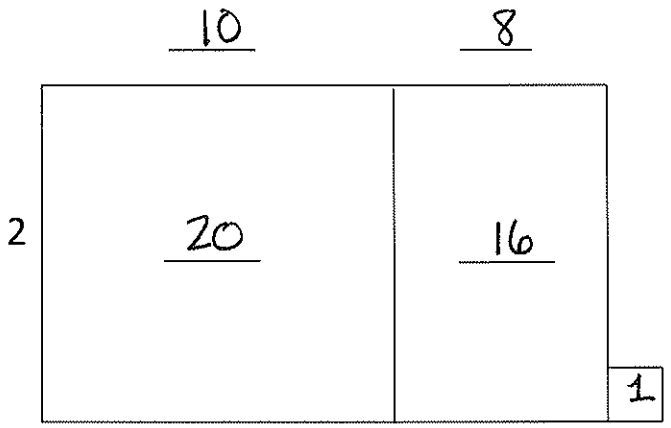
= 10 + 5

= 15

90 ÷ 6 = 15

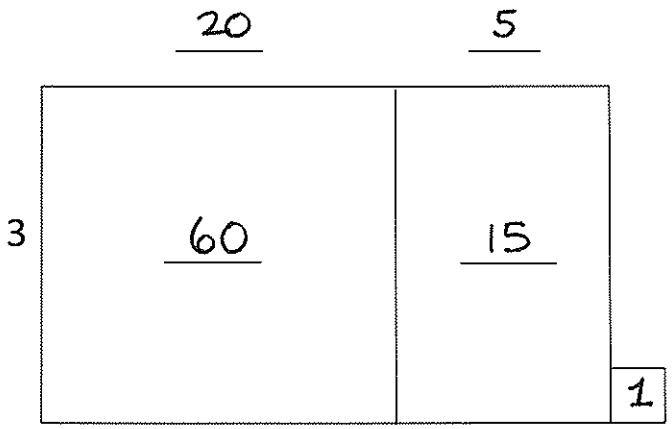
Name Key Date

1. Solve 37 ÷ 2 using an area model. (possible solutions)



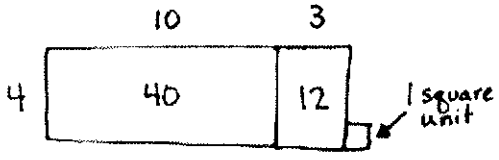
37 ÷ 2= 18 r 1

2. Solve 76 ÷ 3 using an area model.



76 ÷ 3= 25 r 1

3. Carolina solved the following division problem by drawing an area model.

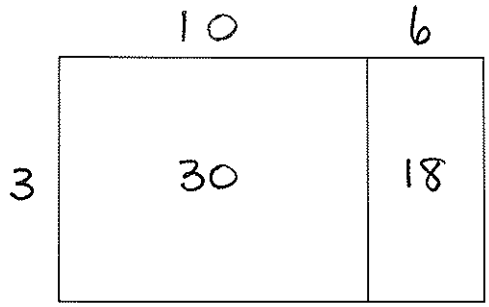


What division problem did she solve? 52 ÷ 4 = 13 r 1

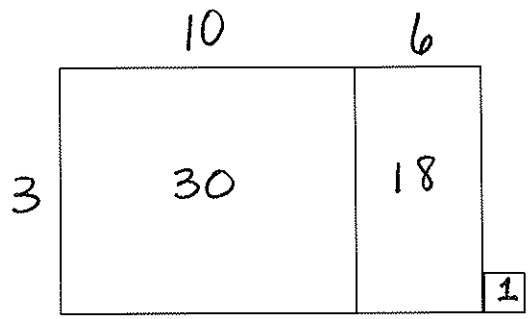
(possible solutions)

Solve the following problems using the area model.

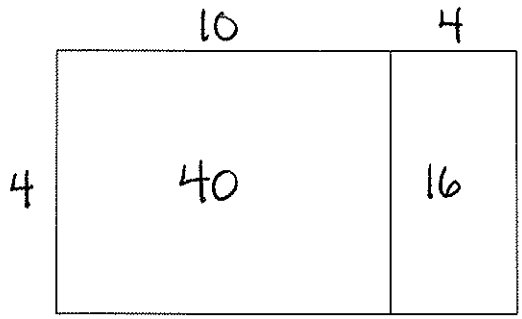
4. $48 \div 3 =$ 16



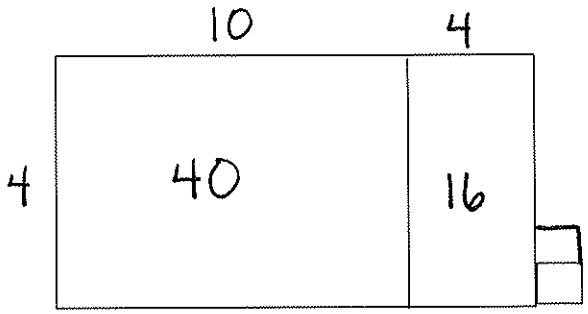
5. $49 \div 3 =$ 16 r 1



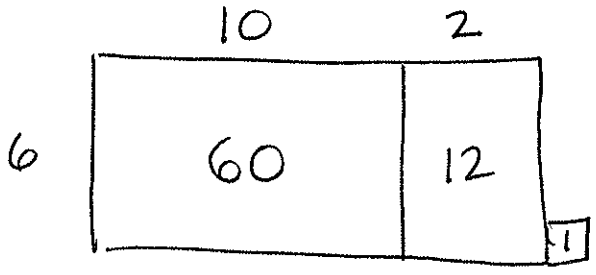
6. $56 \div 4 =$ 14



7. $58 \div 4 =$ 14 r 2



8. Seventy-three students are divided into groups of 6 students each. How many groups of 6 students are there? How many students will not be in a group of 6?



$73 \div 6 =$ 12 r 1

There will be 12 groups of 6 students and one student left.

Name Key Date _____

Solve using the Forgiving Method. (Possible Solutions)

1. $46 \div 2$

$$\begin{array}{r|l} 2\overline{)46} & \\ -20 & 10 \\ \hline 26 & \\ -20 & 10 \\ \hline 6 & \\ -6 & 3 \\ \hline 0 & 23 \end{array}$$

2. $96 \div 3$

$$\begin{array}{r|l} 3\overline{)96} & \\ -90 & 30 \\ \hline 6 & \\ -6 & 2 \\ \hline 0 & 32 \end{array}$$

3. $85 \div 5$

$$\begin{array}{r|l} 5\overline{)85} & \\ -50 & 10 \\ \hline 35 & \\ -35 & 7 \\ \hline 0 & 17 \end{array}$$

4. $52 \div 4$

$$\begin{array}{r|l} 4\overline{)52} & \\ -40 & 10 \\ \hline 12 & \\ -12 & 3 \\ \hline 0 & 13 \end{array}$$

5. $53 \div 3$

$$\begin{array}{r|l} 3\overline{)53} & \\ -30 & 10 \\ \hline 23 & \\ -21 & 7 \\ \hline 2 & 17 \end{array}$$

6. $95 \div 4$

$$\begin{array}{r|l} 4\overline{)95} & \\ -80 & 20 \\ \hline 15 & \\ -12 & 3 \\ \hline 3 & 23 \end{array}$$

7. $89 \div 6$

$$\begin{array}{r|l} 6\overline{)89} & \\ -60 & 10 \\ \hline 29 & \\ -24 & 4 \\ \hline 5 & 14 \end{array}$$

8. $96 \div 6$

$$\begin{array}{r|l} 6\overline{)96} & \\ -60 & 10 \\ \hline 36 & \\ -36 & 6 \\ \hline 0 & 16 \end{array}$$

2. Use the associative property to find more factors of 24 and 36.

a. $24 = 12 \times 2$

$= (4 \times 3) \times 2$

$= 4 \times (3 \times 2)$

$= 4 \times 6$

$= 24$

b. $36 = 9 \times 4$

$= (3 \times 3) \times 4$

$= 3 \times (3 \times 4)$

$= 3 \times 12$

$= 36$

3. Use the Forgiving Method of division to show that 4 is a factor of 56, 72, and 80.

$56 \div 4$

$$\begin{array}{r|l} 14 & \\ 4\overline{)56} & \\ -40 & 10 \\ \hline 16 & \\ -16 & 4 \\ \hline 0 & 14 \end{array}$$

$72 \div 4$

$$\begin{array}{r|l} 18 & \\ 4\overline{)72} & \\ -40 & 10 \\ \hline 32 & \\ -32 & 8 \\ \hline 0 & 18 \end{array}$$

$80 \div 4$

$$\begin{array}{r|l} 20 & \\ 4\overline{)80} & \\ -40 & 10 \\ \hline 40 & \\ -40 & 10 \\ \hline 0 & 20 \end{array}$$

Name Key Date _____

1. List the numbers that have 24 as a multiple.

1, 2, 3, 4, 6, 8, 12

2. Use mental math, division, or the associate property to solve.

   a. Is 12 a multiple of 4? Yes Is 4 a factor of 12? Yes

   b. Is 42 a multiple of 8? No Is 8 a factor of 42? No

   c. Is 84 a multiple of 6? Yes Is 6 a factor of 84? Yes

   60 ^ 24

3. Can a prime number be a multiple of any other number except 1 or itself? Explain your reasons why.

No. Prime numbers have only 1 and itself as factors. If they had other factors, they would be multiples of those factors.

4. Follow the directions below.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

a. Circle in red the multiples of 2. When a number is a multiple of 2, what are the possible values for the ones digit? 0, 2, 4, 6, 8

b. Shade in green the multiples of 3. Choose one. What do you notice about the sum of the digits? Choose another. What do you notice about the sum of the digits? The sum of the digits equal a multiple of 3.

c. Circle in blue the multiples of 5. When a number is a multiple of 5, what are the possible values for the ones digit? 0 or 5

d. Draw an X over the multiples of 10. What digit do all multiples of 10 have in common? What is the digit? 0

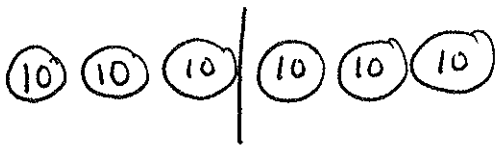
Name Key Date _____

1. Draw number disks to represent the following problems. Rewrite each in unit form and solve.

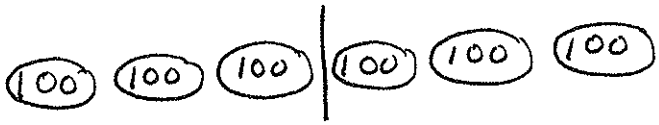
a. 6 ÷ 2 = 3

6 ones ÷ 2 = 3 ones

b. 60 ÷ 2 = 30

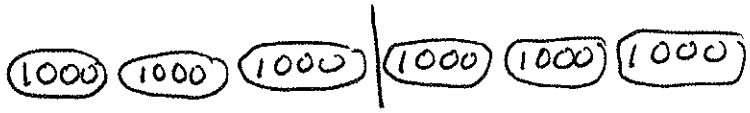


6 tens ÷ 2 = 3 tens



c. 600 ÷ 2 = 300

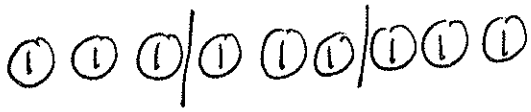
6 hundreds ÷ 2 = 3 hundreds



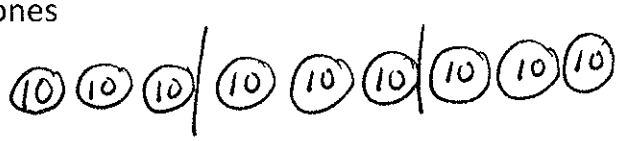
d. 6,000 ÷ 2 = 3,000

6 thousands ÷ 2 = 3 thousands

e. 9 ÷ 3 = 3

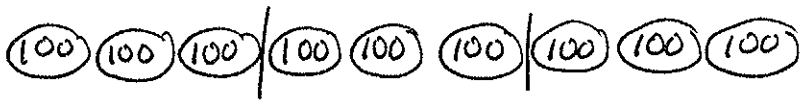


9 ones ÷ 3 = 3 ones



f. 90 ÷ 3 = 30

9 tens ÷ 3 = 3 tens



g. 900 ÷ 3 = 300

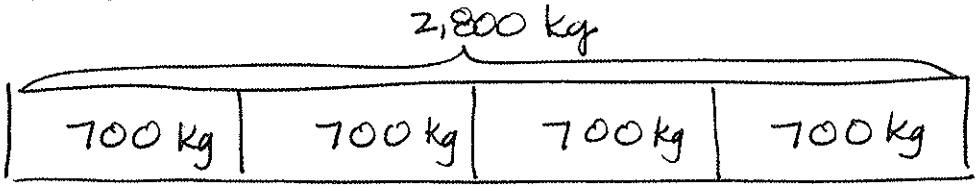
9 hundreds ÷ 3 = 3 hundreds

2. Rewrite each in unit form. Solve for the quotient.

a. 800 ÷ 2 = 400 8 hundreds ÷ 2 = 4 hundreds	b. 600 ÷ 2 = 300 6 hundreds ÷ 2 = 3 hundreds	c. 800 ÷ 4 = 200 8 hundreds ÷ 4 = 2 hundreds
d. 300 ÷ 6 = 50 30 tens ÷ 6 = 5 tens	e. 240 ÷ 4 = 60 24 tens ÷ 4 = 6 tens	f. 450 ÷ 5 = 90 45 tens ÷ 5 = 9 tens
g. 3,600 ÷ 4 = 900 36 hundreds ÷ 4 = 9 hundreds	h. 2,400 ÷ 4 = 600 24 hundreds ÷ 4 = 6 hundreds	i. 2,400 ÷ 3 = 800 24 hundreds ÷ 3 = 8 hundreds

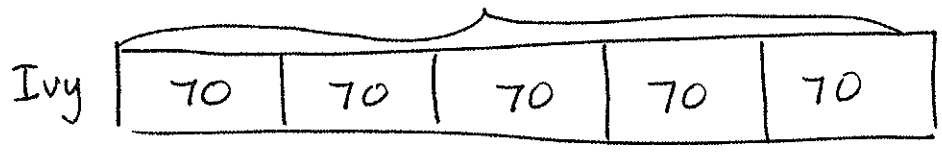
Draw tape diagrams to solve.

4. Some sand weighs 2,800 kilograms. It is divided equally between 4 trucks. How many kilograms of sand are in each truck?



Each truck has 700 kg of sand.

5. Ivy has 5 times as many stickers as Adrian has. Ivy has 350 stickers. How many stickers does Adrian have?



Adrian has 70 stickers.

Name Key Date

1. Divide using the forgiving method.

a. $574 \div 2$

$$\begin{array}{r|l} 2\overline{)574} & \\ -400 & 200 \\ \hline 174 & \\ -160 & 80 \\ \hline 14 & \\ -14 & 7 \\ \hline 0 & 287 \end{array}$$

b. $861 \div 3$

$$\begin{array}{r|l} 3\overline{)861} & \\ -600 & 200 \\ \hline 261 & \\ -210 & 70 \\ \hline 51 & \\ -30 & 10 \\ \hline 21 & \\ -21 & 7 \\ \hline 0 & \end{array}$$

c. $354 \div 2$

$$\begin{array}{r|l} 2\overline{)354} & \\ -200 & 100 \\ \hline 154 & \\ -140 & 70 \\ \hline 14 & \\ -14 & 7 \\ \hline 0 & \end{array}$$

d. $354 \div 3$

$$\begin{array}{r|l} 3\overline{)354} & \\ -300 & 100 \\ \hline 54 & \\ -30 & 10 \\ \hline 24 & \\ -24 & 8 \\ \hline 0 & \end{array}$$

e. $873 \div 4$

$$\begin{array}{r|l} 4\overline{)873} & \\ -800 & 200 \\ \hline 73 & \\ -40 & 10 \\ \hline 33 & \\ -32 & 8 \\ \hline 1 & 218 \end{array}$$

f. $591 \div 5$

$$\begin{array}{r|l} 5\overline{)591} & \\ -500 & 100 \\ \hline 91 & \\ -50 & 10 \\ \hline 41 & \\ -40 & 8 \\ \hline 1 & 118 \end{array}$$

g. $275 \div 3$

$$\begin{array}{r|l} 3\overline{)275} & 91 \text{ r } 2 \\ -270 & 90 \cdot \\ \hline 5 & 1 \\ -3 & \\ \hline 2 & 91 \end{array}$$

h. $459 \div 5$

$$\begin{array}{r|l} 5\overline{)459} & 91 \text{ r } 4 \\ -450 & 90 \\ \hline 9 & \\ -5 & 1 \\ \hline 4 & 91 \end{array}$$

i. $678 \div 4$

$$\begin{array}{r|l} 4\overline{)678} & 169 \text{ r } 2 \\ -400 & 100 \\ \hline 278 & \\ -200 & 50 \\ \hline 78 & \\ -40 & 10 \\ \hline 38 & \\ -36 & 9 \\ \hline 2 & 169 \end{array}$$

j. $955 \div 4$

$$\begin{array}{r|l} 4\overline{)955} & 238 \text{ r } 3 \\ -800 & 200 \\ \hline 155 & \\ -120 & 30 \\ \hline 35 & \\ -32 & 8 \\ \hline 3 & 238 \end{array}$$

2. Zach filled 581 one-liter bottles with apple cider. He distributed the bottles evenly to 4 stores. How many liter bottles did each of the stores receive? Were there any bottles left over? If so, how many?

$$\begin{array}{r|l} 4\overline{)581} & 145 \text{ r } 1 \\ -400 & 100 \\ \hline 181 & \\ -160 & 40 \\ \hline 21 & \\ -20 & 5 \\ \hline 1 & 145 \end{array}$$

Each store got 145 bottles, and there was one bottle left.

Name Key Date

1. Divide using the Forgiving Method.

a. 1,672 ÷ 4

418
4)1672
-1600 400
72
-40 10
32
-32 8
0 418

b. 1,578 ÷ 4

394 r 2
4)1578
-1200 300
378
-360 90
18
-16 4
2 394

c. 6,948 ÷ 2

3474
2)6948
-6000 3000
948
-800 400
148
-140 70
8 4
-8
0

d. 8,949 ÷ 4

2237 r 1
4)8949
-8000 2000
949
-800 200
149
-120 30
29
-28 7
1 2237

e. 7,955 ÷ 5

```
 1591
5)7955
 -5000   1000
 2955
 -2500    500
  455
  -450     90
    5
   -5      1
    0   ----
        1591
```

f. 7,574 ÷ 5

```
 1514r4
5)7574
 -5000   1000
 2574
 -2500    500
   74
  -50      10
   24
  -20      4
    4   ----
        1514
```

g. 7,469 ÷ 3

```
 2489r2
3)7469
 -6000   2000
 1469
 -1200    400
  269
  -210     70
   59
   -30     10
   29
   -27     9
    2   ----
        2489
```

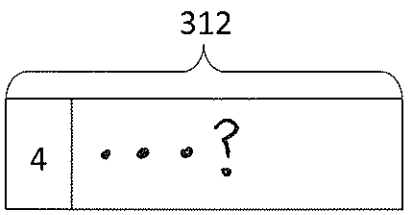
h. 9,956 ÷ 4

```
 2489
4)9956
 -8000   2000
 1956
 -1600    400
  356
  -320     80
   36
   -36     9
    0   ----
        2489
```

Name Key Date

Draw a tape diagram to solve. Identify if the group size or the number of groups is unknown.

1. Monique needs exactly 4 plates on each table for the banquet. If she has 312 plates, how many tables is she able to prepare?



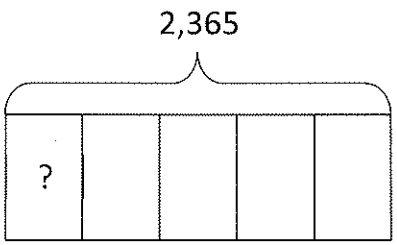
$$\begin{array}{r|l} 78 & \\ 4\overline{)312} & \\ -280 & 70 \\ \hline 32 & \\ -32 & 8 \\ \hline 0 & 78 \end{array}$$

She is able to prepare 78 tables.

____ group size unknown

X number of groups unknown

2. 2,365 books were donated to an elementary school. If 5 classrooms shared the books equally, how many books did each class receive?



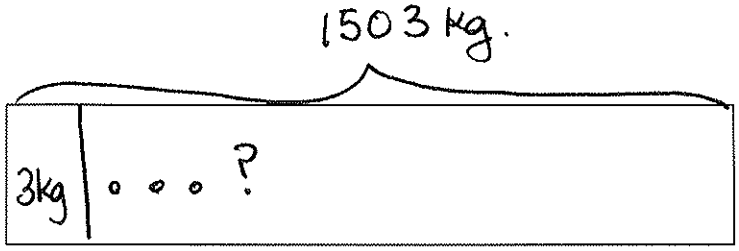
$$\begin{array}{r|l} 473 & \\ 5\overline{)2,365} & \\ -2000 & 400 \\ \hline 365 & \\ -350 & 70 \\ \hline 15 & \\ -15 & 3 \\ \hline 0 & 473 \end{array}$$

X group size unknown

____ number of groups unknown

Each class received 473 books.

3. If 1,503 kilograms of rice was packed in sacks weighing 3 kilograms each, how many sacks were packed?



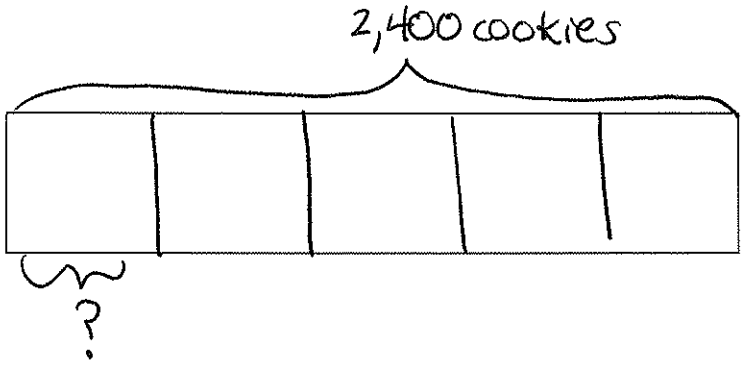
$$\begin{array}{r|l} 501 & \\ 3\overline{)1503} & \\ -1500 & 500 \\ \hline 3 & 1 \\ -\ \frac{3}{0} & \\ \hline & 501 \end{array}$$

They packed 501 sacks of rice.

____ group size unknown

__X__ number of groups unknown

4. Rita made 5 batches of cookies. There were a total of 2,400 cookies. If there were the same number of cookies in each batch, how many cookies were in each batch?



$$\begin{array}{r|l} 480 & \\ 5\overline{)2400} & \\ -2000 & 400 \\ \hline 400 & \\ -400 & 80 \\ \hline 0 & 480 \end{array}$$

__X__ group size unknown

____ number of groups unknown

There were 480 cookies in each batch.

Name Key Date

Use the forgiving method of division to solve.

1. A concert hall contains 8 sections of seats with the same number of seats in each section. If there are 248 seats, how many seats are in each section?

There were 31 seats in each section.

$$\begin{array}{r|l} 8\overline{)248} & \\ -240 & 30 \\ \hline 8 & 1 \\ -\ 8 & \\ \hline 0 & 31 \end{array}$$

2. In one day, the bakery made 719 bagels. The bagels were divided into 9 equal shipments. A few bagels were left over and given to the baker. How many bagels did the baker get?

The baker got the 8 extra bagels.

$$\begin{array}{r|l} 9\overline{)719} & \\ -630 & 70 \\ \hline 89 & \\ -\ 81 & +\ 9 \\ \hline 8 & 79 \end{array}$$

3. The sweet shop has 614 pieces of candy. They packed the candy into bags with 7 pieces in each bag. How many bags of candy did they fill? How many pieces of candy were left?

They filled 87 bags and there were 5 pieces of candy left.

```
  87 r 5
7 ) 614
   -560   80
    54
   -49    7
     5    87
```

4. There were 904 children signed up for the relay race. If there were 6 children on each team, how many teams were made? The remaining children served as referees. How many children served as referees?

There were 150 teams and 4 children were referees.

```
  150 r 4
6 ) 904
   -600   100
    304
   -300    50
      4   150
```

Name Key Date _____

Use an area model to represent the following expressions in word form. Record the partial products and solve.

1. 20 × 22

	20	2
20	2 tens x 2 tens = 4 hundreds = 400	2 tens x 2 = 4 tens = 40

$$\begin{array}{r} 20 \\ \times\ 22 \\ \hline 40 \\ +400 \\ \hline 440 \end{array}$$

2. 50 × 41

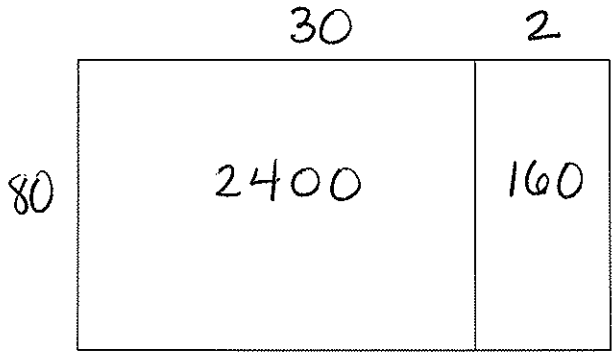
	40	1
50	5 tens x 4 tens = 20 hundreds = 2000	5 tens x 1 = 5 tens = 50

$$\begin{array}{r} 50 \\ \times\ 41 \\ \hline 50 \\ +2000 \\ \hline 2,050 \end{array}$$

Draw an area model to represent the following expressions in standard form.

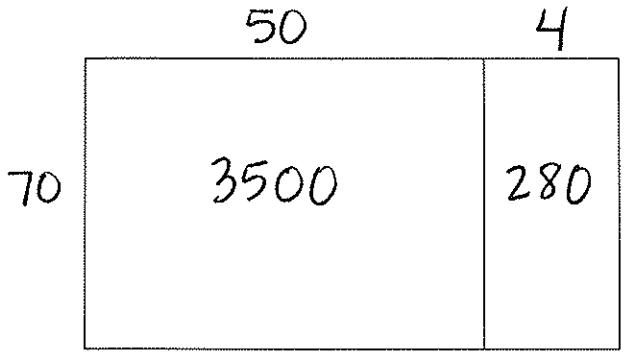
Record the partial products vertically and solve.

3. 80×32



$$\begin{array}{r} 80 \\ \times\ 32 \\ \hline 160 \\ +\ 2400 \\ \hline 2,560 \end{array}$$

4. 70×54



$$\begin{array}{r} 70 \\ \times\ 54 \\ \hline 280 \\ 3500 \\ \hline 3,780 \end{array}$$

Solve using partial products.

5. 30×68

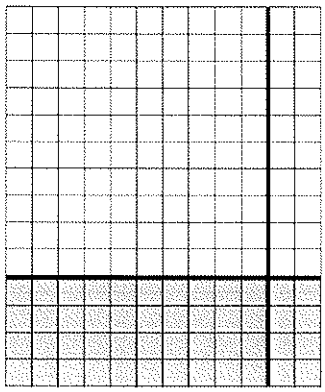
$$\begin{array}{r} 30 \\ \times\ 68 \\ \hline 240 \\ +\ 1800 \\ \hline 2,040 \end{array}$$

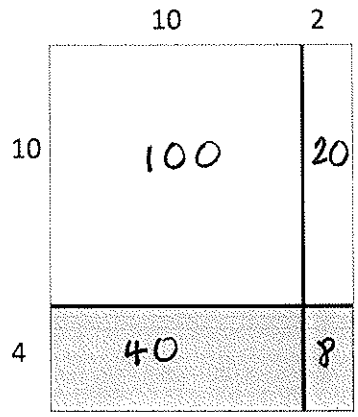
6. 60×34

$$\begin{array}{r} 60 \\ \times\ 34 \\ \hline 240 \\ 1800 \\ \hline 2040 \end{array}$$

Name Key Date

1. Write the expression shown by these area models. 14 x 12





Use the distributive property to find the product.

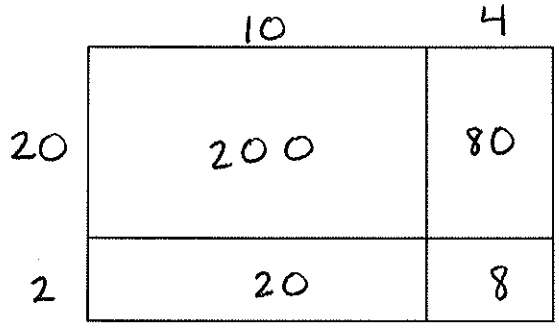
14 × 12 = (10 × 10) + (10 × 2) + (4 × 10) + (4 × 2)

14 x 12 = 100 + 20 + 40 + 8

14 x 12 = 168

2. Use an area model to represent the following expressions. Record the partial products and solve.

a. 22 × 14



$$\begin{array}{r} 22 \\ \times\ 14 \\ \hline 8 \\ 80 \\ \hline 20 \\ +\ 200 \\ \hline 308 \end{array}$$

Draw an area model to solve. Record the partial products vertically and solve.

3. 25 × 32

	30	2
20	600	40
5	150	10

$$\begin{array}{r} 25 \\ \times\ 32 \\ \hline 10 \\ 40 \\ 150 \\ +\ 600 \\ \hline 800 \end{array}$$

4. 35 × 42

	40	2
30	1200	60
5	200	10

$$\begin{array}{r} 35 \\ \times\ 42 \\ \hline 10 \\ 60 \\ 200 \\ +1200 \\ \hline 1{,}470 \end{array}$$

Solve using four partial products.

5. 42 × 11

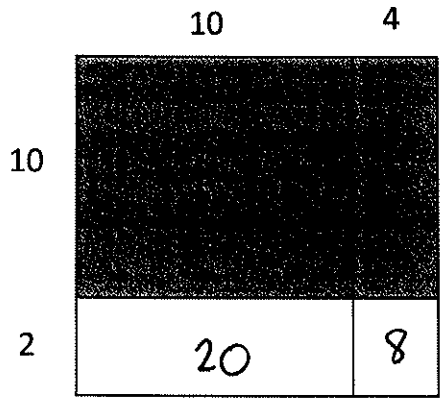
$$\begin{array}{r} 42 \\ \times\ 11 \\ \hline 2 \\ 40 \\ 20 \\ +\ 400 \\ \hline 462 \end{array}$$

6. 46 × 11

$$\begin{array}{r} 46 \\ \times\ 11 \\ \hline 6 \\ 40 \\ 60 \\ +\ 400 \\ \hline 506 \end{array}$$

Name Key Date

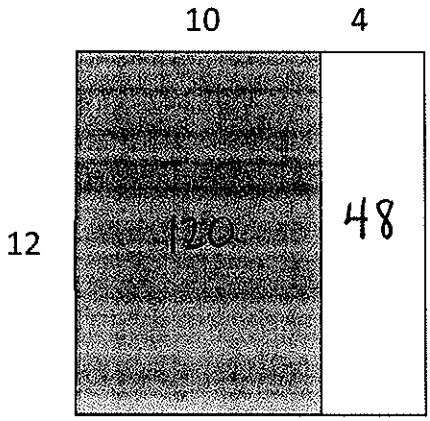
1. Solve 12 × 14 using 4 partial products and 2 partial.



$$\begin{array}{r} 12 \\ \times\ 14 \\ \hline 8 \\ 40 \\ 20 \\ +\ 100 \\ \hline 168 \end{array}$$

4 ones × 2 ones
4 ones × 1 ten
1 ten × 2 ones
1 ten × 1 ten

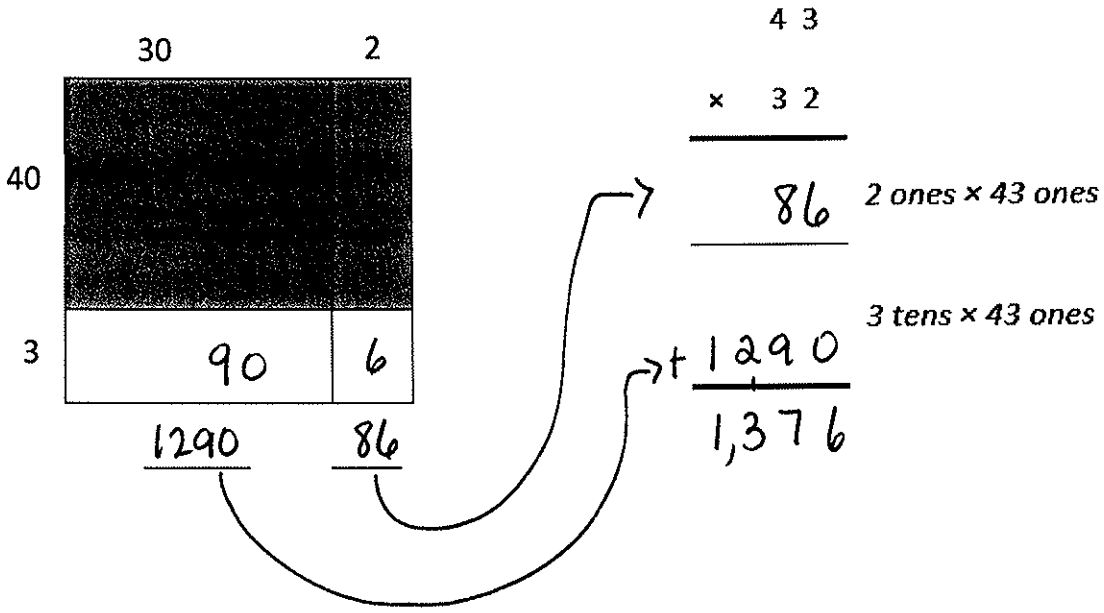
2.



$$\begin{array}{r} 12 \\ \times\ 14 \\ \hline 48 \\ +\ 120 \\ \hline 168 \end{array}$$

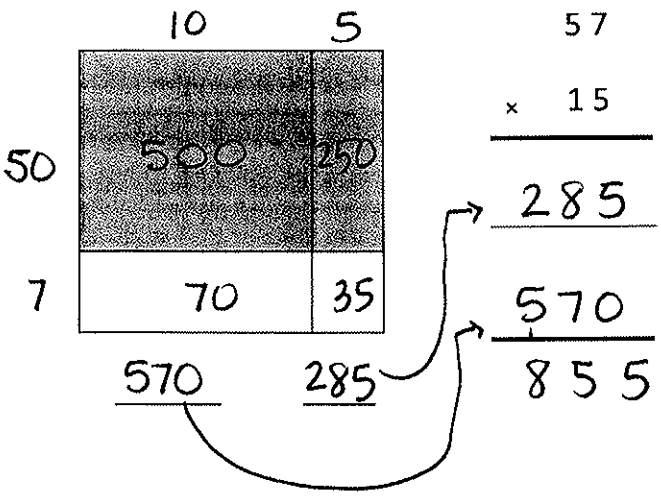
4 ones × 12 ones
1 ten × 12 ones

2. Solve 43 × 32 using the area model. Add cloumns to record two partial products.



3. Solve using the area model. Add the columns to record two partial products.

a. 57 × 15



b. 46 x 35