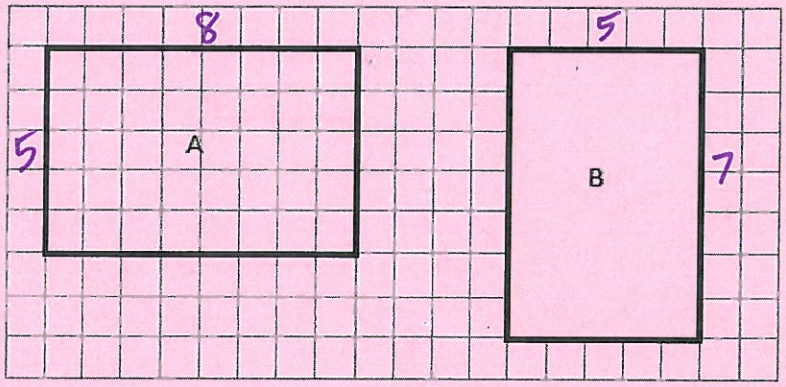
Name KEY Date _____

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

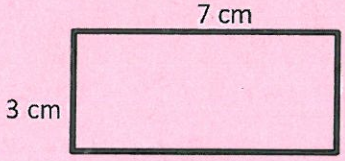


A = 40 units²
P = 26 units

A = 35 units²
P = 24 units

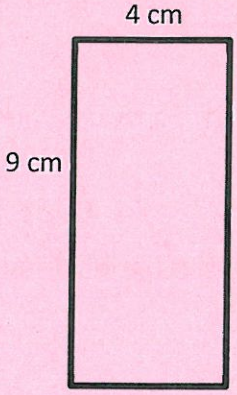
2. Determine the perimeter and area of each rectangle.

a.



P = 20 cm
A = 21 cm²

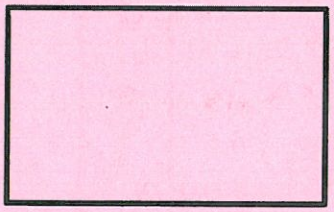
b.



P = 26 cm
A = 36 cm²

3. Determine the perimeter of each rectangle.

a.



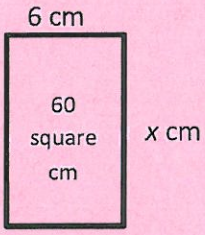
P = 450 m

b.

P = 510 cm or 5m 10cm

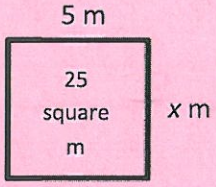
4. Given the rectangle's area, find the unknown side length.

a.



$x =$ 10 cm

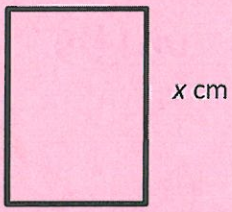
b.



$x =$ 5 m

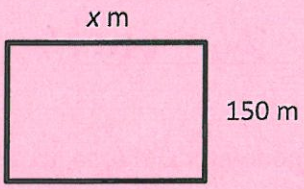
5. Given the rectangle's perimeter, find the unknown side length.

a. P = 180 cm



$x =$ 50 cm

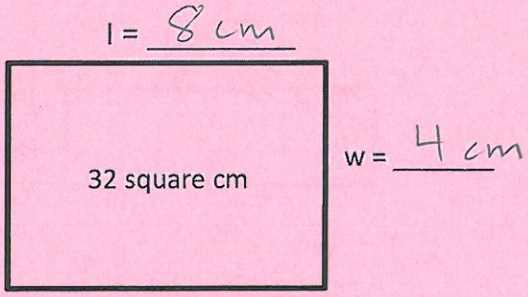
b. P = 1,000 m



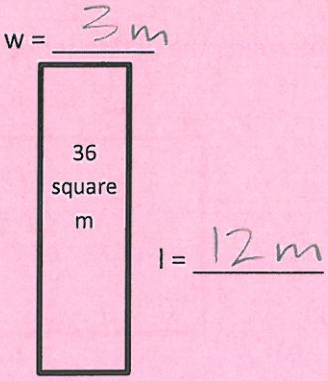
$x =$ 350 m

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

a. A = 32 square cm
P = 24 cm



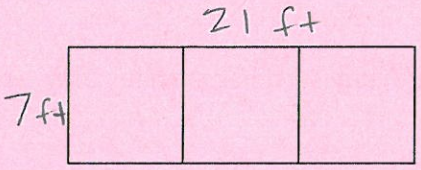
b. A = 36 square m
P = 30 m



Name _____ Date _____

1. A rectangular pool is 7 feet wide. It is 3 times as long as it is wide.

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

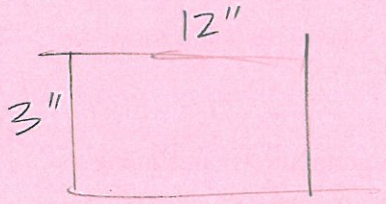


   b. Find the perimeter of the pool.

   7 + 7 + 21 + 21 = 56 ft

2. A poster is 3 inches long. It is 4 times as wide as it is long.

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

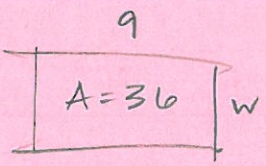


   b. Find the perimeter and area of the poster.

   P = 30 in

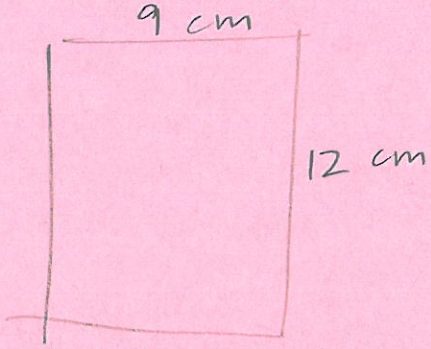
   A = 36 in^2

3. The area of a rectangle is 36 square centimeters and its length is 9 centimeters.



a. What is the width of the rectangle? 4 cm

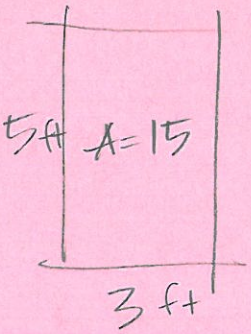
b. Elsa wants to draw a second rectangle that is the same length but is 3 times as wide. Draw and label Elsa's second rectangle.



c. What is the perimeter of Elsa's second rectangle? 42 cm

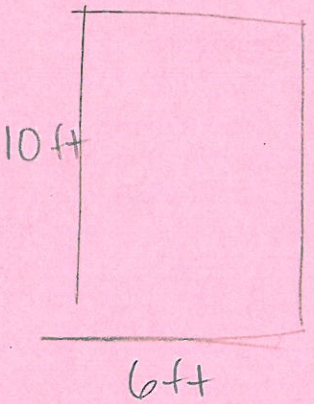
4. The area of Nathan's bedroom rug is 15 square feet. The longer side measures 5 feet. His living room rug is twice as long and twice as wide as the bedroom rug.

a. Draw and label a diagram of Nathan's bedroom rug. What is its perimeter?



P= 16 ft

b. Draw and label a diagram of Nathan's living room rug. What is its perimeter?



P= 32 ft

c. What is the relationship between the two perimeters?

the perimeter of the living room rug is double the perimeter of the bedroom rug.

d. Find the area of the living room rug using the formula $A = l \times w$.

$10 \times 6 = 60 \text{ ft}^2$

e. The living room rug has an area that is how many times that of the bedroom rug?

4 times as much $(15 \times 4 = 60)$

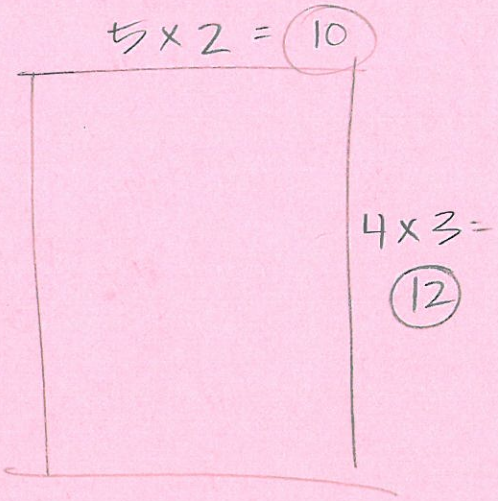
f. Compare how the perimeter changed with how the area changed between the two rugs. Explain what you notice using words, pictures, or numbers.

When the sides are doubled, the perimeter will double but the area will quadruple.

Name _____ Date _____

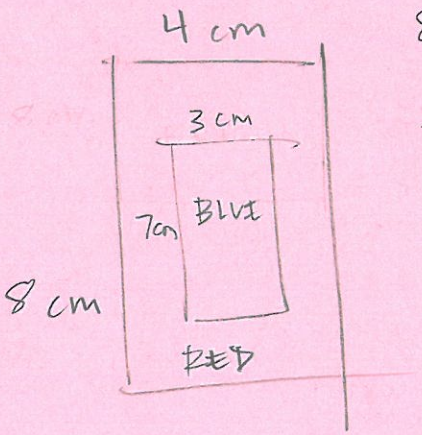
Solve the following problems. Use pictures, numbers, or words to show your work.

1. Katie cut out a rectangular piece of wrapping paper that was 2 times as long and 3 times as wide as the box that she was wrapping. The box was 5 inches long and 4 inches wide. What is the perimeter of the wrapping paper that Katie cut?



10 + 10 + 12 + 12 = 44 inches

2. Alexis has a rectangular piece of red paper that is 4 centimeters wide. Its length is twice its width. She glues a rectangular piece of blue paper on top of the red piece measuring 3 centimeters by 7 centimeters. How many square centimeters of red paper will be visible on top?



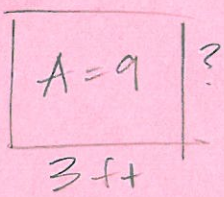
8 x 4 = 32 → RED

7 x 3 = 21 → BLUE

11 cm^2

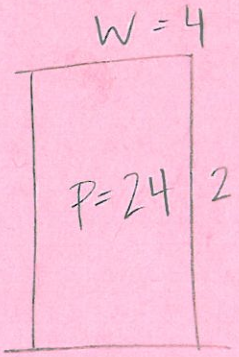
3. Brinn's rectangular kitchen has an area of 81 square feet. The kitchen is 9 times as many square feet as Brinn's pantry. If the rectangular pantry is 3 feet wide, what is the length of the pantry?

$\frac{9}{\text{PANTRY}} \times 9 = 81$ sq



length = 3 ft of pantry

4. The length of Marshall's rectangular poster is 2 times its width. If the perimeter is 24 inches, what is the area of the poster?



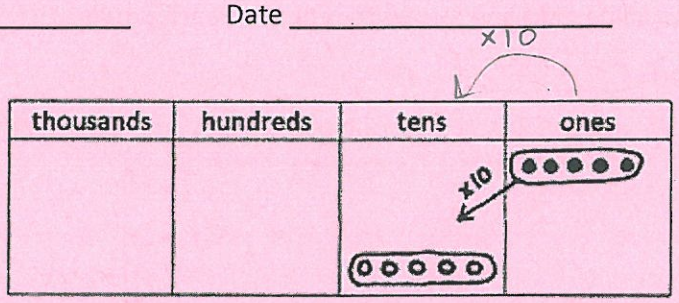
$4 \times 8 = 32$ in^2

Name _____ Date _____

Example:

$5 \times 10 =$ 50

5 ones × 10 = 5 tens

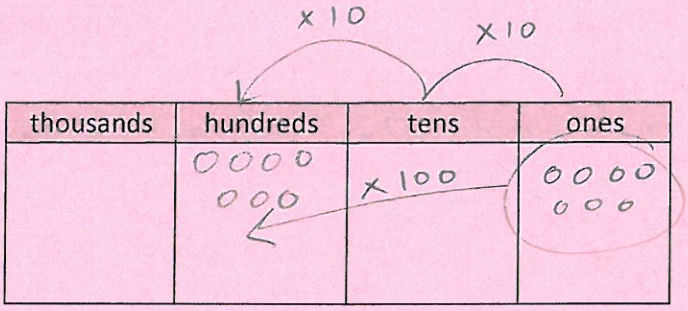


Draw place value disks and arrows as shown to represent each product.

1. $7 \times 100 =$ 700

$7 \times 10 \times 10 =$ 700

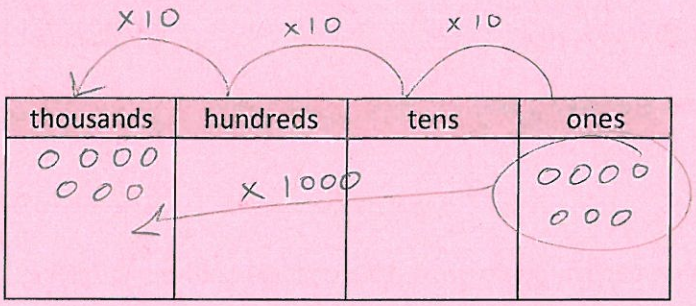
7 ones × 100 = 7 hundreds



2. $7 \times 1{,}000 =$ 7000

$7 \times 10 \times 10 \times 10 =$ 7000

7 ones × 1,000 = 7 thousands



3. Fill in the blanks in the following equations.

a. $8 \times 10 =$ 80

b. 100 × 8 = 800

c. 8,000 = 8 × 1,000

d. $10 \times 3 =$ 30

e. $3 \times$ 1000 = 3,000

f. 100 × 3 = 300

g. $1{,}000 \times 4 =$ 4000

h. 40 = 10 × 4

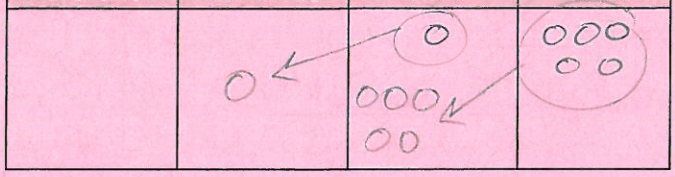
i. 400 = 4 × 100

Draw place value disks and arrows to represent each product.

4. 15 × 10 = 150

(1 ten 5 ones) × 10 = 15 tens

thousands	hundreds	tens	ones

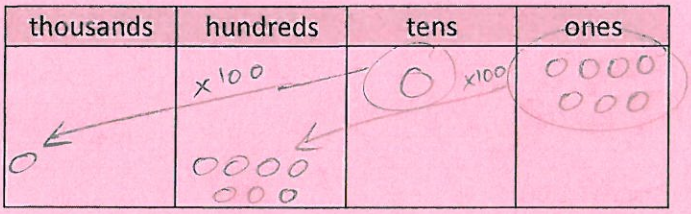


5. 17 × 100 = 1700

17 × 10 × 10 = 1700

(1 ten 7 ones) × 100 = 17 hundreds

thousands	hundreds	tens	ones

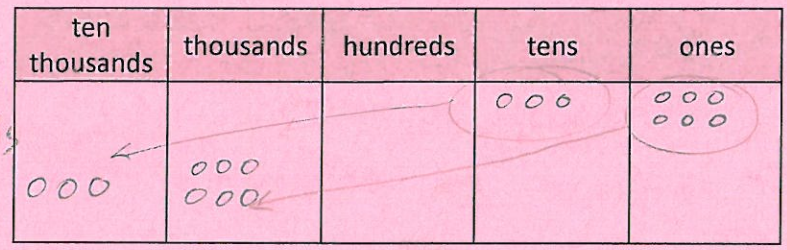


6. 36 × 1,000 = 36 000

36 × 10 × 10 × 10 = 36000

(3 tens 6 ones) × 1,000 = 36 thousands

ten thousands	thousands	hundreds	tens	ones



Decompose each multiple of 10, 100, or 1000 before multiplying.

7. 2 × 80 = 2 × 8 × 10

160 = 16 × 10

= 160

8. 2 × 400 = 2 × 4 × 100

= 8 × 100

= 800

9. 5 × 5,000 = 5 × 5 × 1000

= 25 × 1000

= 25000

10. 7 × 6,000 = 7 × 6 × 1000

= 42 × 1000

= 42000

Name _____ Date _____

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

1. $5 \times 2 =$ 10

   5 times 2 ones is 10 ones.

thousands	hundreds	tens	ones
			○○ ○○ ○○ ○○ ○○

$$\begin{array}{r} 2 \\ \times\ 5 \\ \hline 10 \end{array}$$

2. $5 \times 20 =$ 100

   5 times 2 tens is 2 hundred.

thousands	hundreds	tens	ones
	○○ ←	○○ ○○ ○○ ○○ ○○	

$$\begin{array}{r} 20 \\ \times\ 5 \\ \hline 100 \end{array}$$

3. $5 \times 200 =$ 1000

   5 times 2 hundreds is 1 thousand.

thousands	hundreds	tens	ones
○ ←	○○ ○○ ○○ ○○ ○○		

$$\begin{array}{r} 200 \\ \times\ 5 \\ \hline 1000 \end{array}$$

4. $5 \times 2{,}000 =$ 10000

   5 times 2 thousand is 10 thousands

thousands	hundreds	tens	ones
○○ ○○ ○○ ○○ ○○			

$$\begin{array}{r} 2{,}000 \\ \times\ 5 \\ \hline 10\,000 \end{array}$$

5. Find the product.

a. 20×9 180	b. 6×70 420	c. 7×700 4900	d. 3×900 2700
e. 9×90 810	f. 40×7 280	g. 600×6 3600	h. $8 \times 6{,}000$ 48000
i. 5×70 350	j. 5×80 400	k. 5×200 1000	l. $6{,}000 \times 5$ 30000

6. At the school cafeteria, each student who ordered lunch gets 6 chicken nuggets. The cafeteria staff prepares enough for 300 kids. How many chicken nuggets does the cafeteria staff prepare altogether?

6 x 300 = 1800 chicken nuggets

7. Jaelynn has 30 times as many stickers as her brother. Her brother has 8 stickers. How many stickers does Jaelynn have?

30 x 8 = 240 stickers

8. The flower shop has 40 times as many flowers in one cooler as Julia has in her bouquet. The cooler has 120 flowers. How many flowers are in Julia's bouquet?

40 x ___ = 120

3 flowers

Name _____ Date _____

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

1. To solve 30 × 60, think:

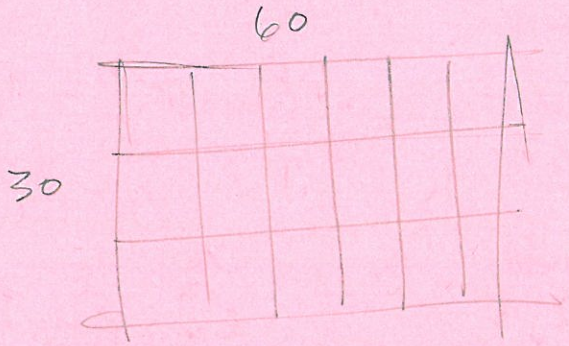
(3 tens × 6) × 10 = 180 1800

30 × (6 × 10) = 60 1800

30 × 60 = 1800

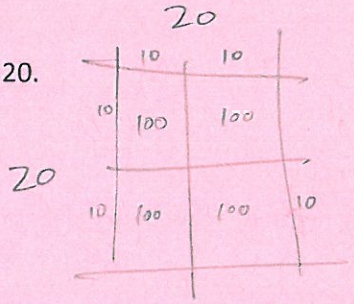
hundreds	tens	ones
18	×10	

2. Draw an area model to represent 30 × 60.



3 tens × 6 tens = 18 hundreds

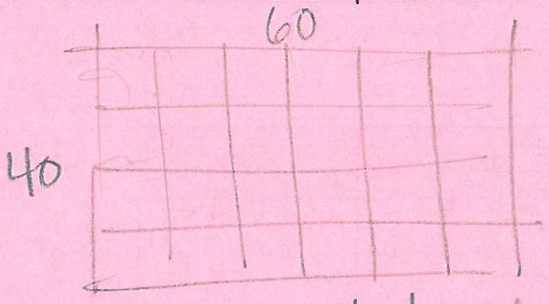
3. Draw an area model to represent 20 × 20.



2 tens × 2 tens = 4 hundreds

20 × 20 = 4

4. Draw an area model to represent 40 × 60.



4 tens × 6 tens = 24 hundreds

40 × 60 = 2400

Rewrite each equation in unit form and solve.

5. 50 × 20 = 1000

5 tens × 2 tens = 10 hundreds

6. 30 × 50 =

3 tens × 5 tens = 15 hundreds

7. 60 × 20 =

6 tens × 2 tens = 12 hundreds

8. 40 × 70 =

4 tens × 7 tens = 28 hundreds

9. There are 60 seconds in a minute and 60 minutes in an hour. How many seconds are in one hour?

60 × 60 = 3600 seconds in an hour

10. To print a comic book, 50 pieces of paper are needed. How many pieces of paper are needed to print 40 comic books?

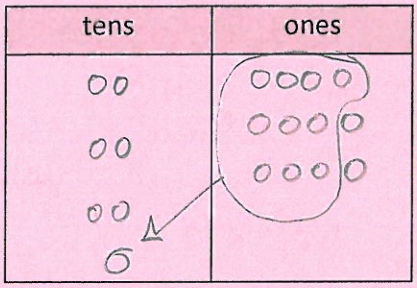
50 × 40 = 2000 pieces of paper

Name _____ Date _____

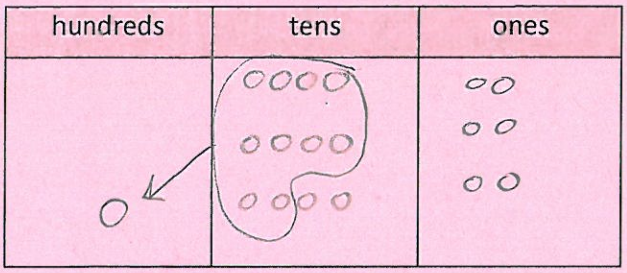
1. Represent the following expressions with disks, regrouping as necessary, writing a matching expression, and recording the partial products vertically.

a. 3×24

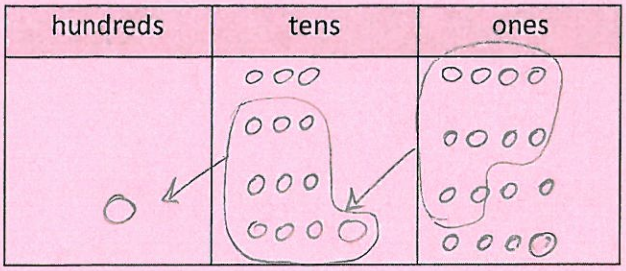
72



b. 3×42 126



c. 4×34 136



2. Represent the following expressions with disks, regrouping as necessary. To the right, record the partial products vertically.

a. 4×27

hundreds	tens	ones
	OO OO OO OO	OOOOOOO OOOOOOO OOOOOOO OOOOOOO

$7 \times 4 = 28$

$20 \times 4 = 80$

b. 5×42

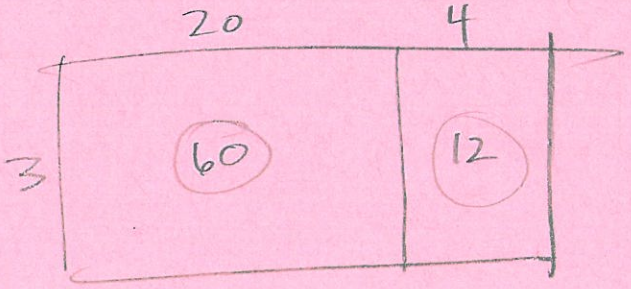
hundreds	tens	ones
	OOOO OOOO OOOO OOOO OOOO	OO OO OO OO OO

$5 \times 40 = 200$

$5 \times 2 = 10$

3. Cindy says she found a shortcut for doing multiplication problems. When she multiplies 3×24, she says, "3×4 is 12 ones, or 1 ten and 2 ones. Then, there's just 2 tens left in 24, so add it up, and you get 3 tens and 2 ones." Do you think Cindy's shortcut works? Explain your thinking in words and justify your response using a model or partial products.

Cindy forgot to do 3×20 in her shortcut



Name _____ Date _____

1. Represent the following expressions with disks, regrouping as necessary, writing a matching expression, and recording the partial products vertically as shown below.

a. 2×424

hundreds	tens	ones
●●●●	●●	●●●●
○○○○	○○	○○○○

$2 \times$ 4 hundreds + $2 \times$ 2 tens + $2 \times$ 4 ones

$$\begin{array}{r} 4^{\circ\circ}\ 2^{\circ}\ 4 \\ \times \quad\quad 2 \\ \hline 8 \\ 40 \\ +\ 8\ 0\ 0 \\ \hline 8\ 4\ 8 \end{array}$$

→ $2 \times$ 4 ones
→ $2 \times$ 2 tens
→ 2 × 4 hundreds

b. 3×424

hundreds	tens	ones
○○○○ ○○○ ○○	○○ ○○ ○○	○○○○ ○○○○ ○○

$$\begin{array}{r} 4^{\circ\circ}2^{\circ}4 \\ \times \quad 3 \\ \hline 12 \\ 60 \\ +\ 1200 \\ \hline 1272 \end{array}$$

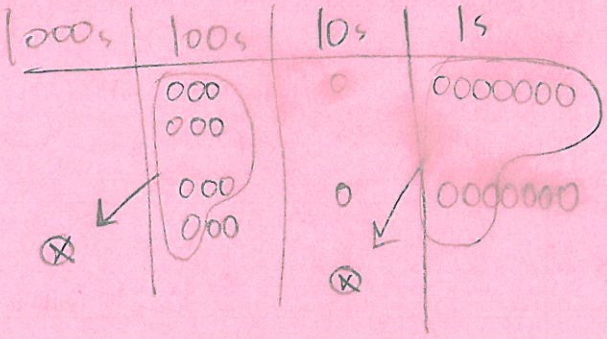
c. $4 \times 1{,}424$

1000s	100s	10s	1s
0	○○○○	○○	○○○○
0	○○○○	○○	○○○○
0	○○○○	○○	○○○○
0	○○○○	○○	○○○○
0		0	

$$\begin{array}{r} 1^{\circ\circ\circ}4^{\circ\circ}2^{\circ}4 \\ \times \quad\quad 4 \\ \hline 16 \\ 80 \\ 1600 \\ +\ 4000 \\ \hline 5696 \end{array}$$

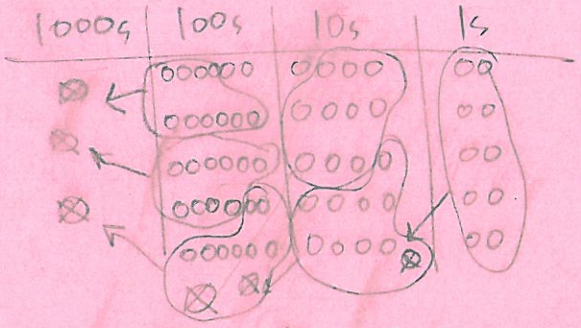
2. Represent the following expressions with disks, using either method shown in class, regrouping as necessary. To the right, record the partial products vertically.

a. 2×617



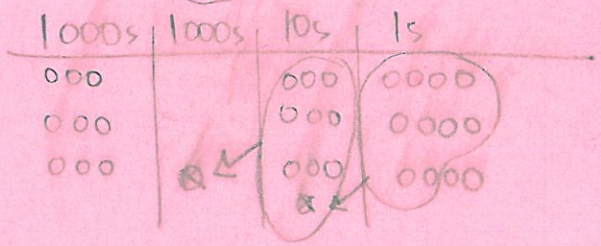
$$\begin{array}{r} 617 \\ \times \quad 2 \\ \hline 14 \\ 20 \\ +1200 \\ \hline 1234 \end{array}$$

b. 5×642



$$\begin{array}{r} 642 \\ \times \quad 5 \\ \hline 10 \\ 200 \\ 3000 \\ \hline 3210 \end{array}$$

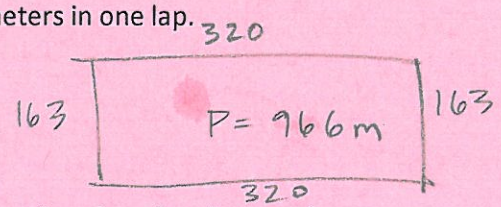
c. $3 \times 3{,}034$



$$\begin{array}{r} 3034 \\ \times \quad 3 \\ \hline 12 \\ 190 \\ 9000 \\ \hline 9102 \end{array}$$

3. Every day, Penelope jogs three laps around the playground to keep in shape. The playground is rectangular with a width of 163 m and a length of 320 m.

a. Find the total amount of meters in one lap.



b. Determine how many meters Penelope jogs in three laps.

$$\begin{array}{r} 966 \\ \times \quad 3 \\ \hline 18 \\ 180 \\ +2700 \\ \hline 2898 \end{array}$$

Name _____ Date _____

1. Solve using each method.

Partial Products	Standard Algorithm
a. 46×2 $12 + 80 = 92$	$46 \times 2 = 92$

Partial Products	Standard Algorithm
b. 315×4 $20 + 40 + 1200 = 1260$	$315 \times 4 = 1260$

2. Solve using the standard algorithm.

a. $232 \times 4 = 928$	b. $142 \times 6 = 852$	c. $314 \times 7 = 2198$
d. $440 \times 3 = 1320$	e. $507 \times 8 = 4056$	f. $384 \times 9 = 3456$

3. What is the product of 8 and 54?

4. Isabel earned 350 points while she was playing Blasting Robot. Isabel's mom earned 3 times as many points as Isabel. How many points did Isabel's mom earn?

350
× 3
1050 points

5. To get enough money to go to on a field trip, every student in a club has to raise $53 by selling chocolate bars. There are 9 students in the club. How much money does the club need to raise to go on the field trip?

2
53
× 9
$477

6. Mr. Meyers wants to order 4 tablets for his classroom. Each tablet costs $329. How much will all four tablets cost?

1 3
329
× 4
$1316

7. Amaya read 64 pages last week. Amaya's older brother, Rogelio, read twice as many pages in the same amount of time. Their big sister, Elianna, is in high school and read 4 times as many pages as Rogelio did. How many pages did Elianna read last week?

64 (A)
× 2
1 3
128 (R)
× 4
512 (E)

OR

2 × 4 = 8
3
64
× 8
512 pages
Elianna read

Name _____ Date _____

1. Solve using the standard algorithm.

a. $3 \times 41 = 123$	b. $9 \times 41 = 369$
c. $7 \times 143 = 1001$	d. $7 \times 286 = 2002$
e. $4 \times 2{,}048 = 8192$	f. $4 \times 4{,}096 = 16384$ NOTICE HOW THESE ANSWERS ARE RELATED!
g. $8 \times 4{,}096 = 32768$	h. $4 \times 8{,}192 = 32768$

2. Robert's family brings six gallons of water for the players on the football team. If one gallon of water contains 128 fluid ounces, how many fluid ounces are in six gallons?

128 × 6 = 768 ounces

3. It takes 687 Earth days for the planet Mars to revolve around the Sun once. How many Earth days does it take Mars to revolve around the Sun four times?

687 × 4 = 2748 days

4. Tammy buys a 4-gigabyte memory card for her camera. Dijonea buys a memory card with twice as much storage as Tammy's. One gigabyte is 1,024 megabytes. How many megabytes of storage does Dijonea have on her memory card?

4 × 2 = 8

↑ 4's memory ↑ double it

```
  1 3
  1024
x    8
------
8192 megabytes
```

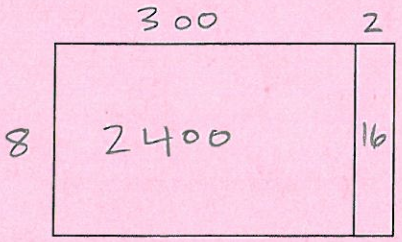
Name _____ Date _____

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

a. 302 × 8

PP:
$$\begin{array}{r} 302 \\ \times \quad 8 \\ \hline 16 \\ +2400 \\ \hline 2416 \end{array}$$

S:
$$\begin{array}{r} 302 \\ \times \quad 8 \\ \hline 2416 \end{array}$$



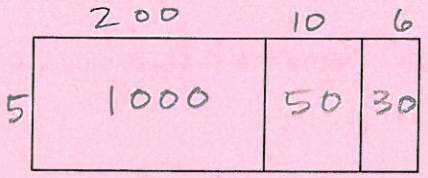
8 (300 + 2)

(8 × 300) + (8 × 2)

b. 216 × 5

PP:
$$\begin{array}{r} 216 \\ \times \quad 5 \\ \hline 30 \\ 50 \\ +1000 \\ \hline 1080 \end{array}$$

S:
$$\begin{array}{r} 216 \\ \times \quad 5 \\ \hline 1080 \end{array}$$



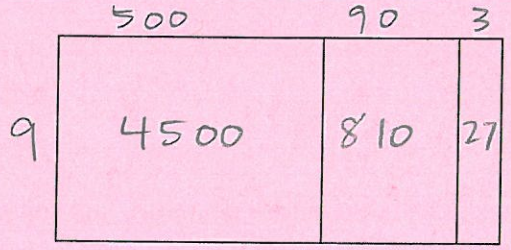
5 (200 + 10 + 6)

(5 × 200) + (5 × 10) + (5 × 6)

c. 593 × 9

PP:
$$\begin{array}{r} 593 \\ \times \quad 9 \\ \hline 27 \\ 810 \\ +4500 \\ \hline 5337 \end{array}$$

S:
$$\begin{array}{r} 593 \\ \times \quad 9 \\ \hline 5337 \end{array}$$



9 (500 + 90 + 3)

(9 × 500) + (9 × 90) + (9 × 3)

2. Solve using the partial products method.

   On Monday, 475 people visited the museum. On Saturday, there were 4 times as many visitors as there were on Monday. How many people visited the museum on Saturday?

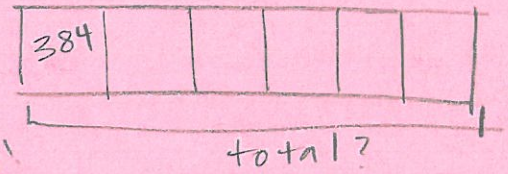
   1300 people

   475 × 4
   120
   280
   + 1600
   1300

3. Model with a tape diagram and solve.

   6 times as much as 384

   2304



Choice!

Solve using the standard algorithm, the area model, the distributive property, or the partial products method.

4. 6,253 × 3 18759

5. 7 times as many as 3,073 21511

6. A cafeteria makes 2,516 pounds of white rice and 608 pounds of brown rice every month. After 6 months, how many pounds of rice does the cafeteria make? 18744 pounds