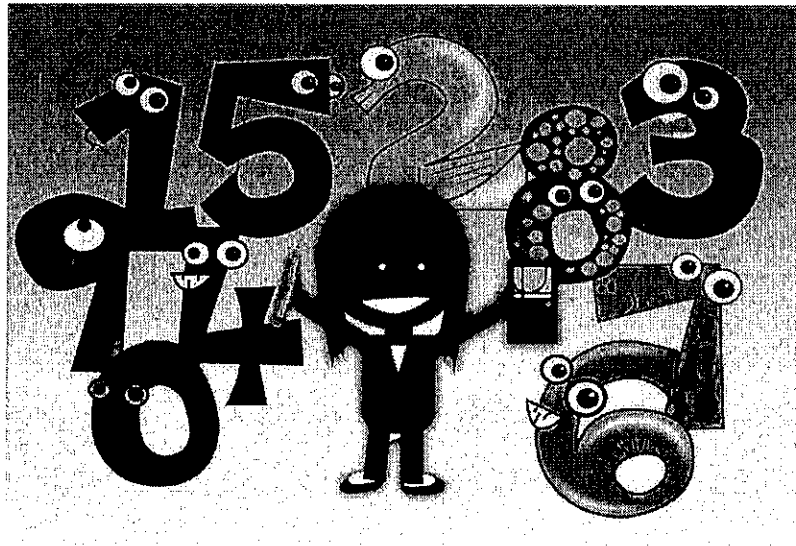


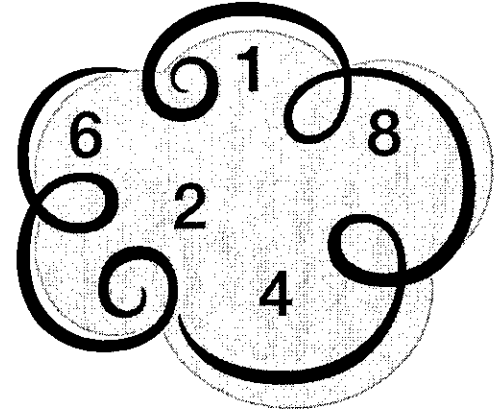
Math Activities Grade 4



Place It Right



Fill in the squares with numbers from the cloud.
Use each number once in each problem.



1. Put one number in each square so that
- the sum is between 1,400 and 1,500.
 - there is a 4 in the tens place in the sum.

What is the sum? _____

$$\begin{array}{r}
 \square \square \square \\
 + \square \square \square \\
 \hline
 \square \square \square
 \end{array}$$

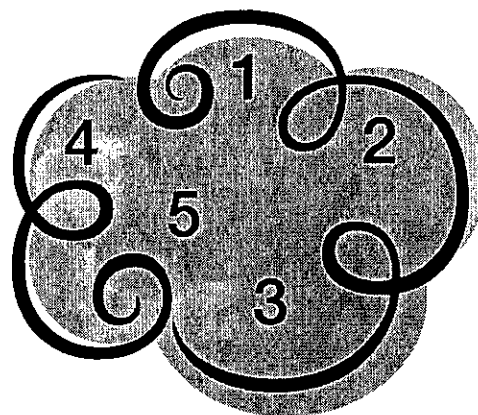
2. Put one number in each square so that
- the sum is between 300 and 400.
 - there is a 4 in the ones place in the sum.

What is the sum? _____

$$\begin{array}{r}
 \square \square \square \\
 + \square \square \square \\
 \hline
 \square \square \square
 \end{array}$$

Place It Right

Fill in the squares with numbers from the cloud.
Use each number once in each problem.



- Put one number in each square so that
 - the sum is between 700 and 800.
 - there is a 3 in the ones place in the sum.

What is the sum? _____

$$\begin{array}{r}
 \square \quad \square \quad \square \\
 + \quad \square \quad \square \quad \square \\
 \hline
 \square \quad \square \quad \square
 \end{array}$$

- Put one number in each square so that
 - the sum is between 300 and 400.
 - there is a 9 in the tens place in the sum.

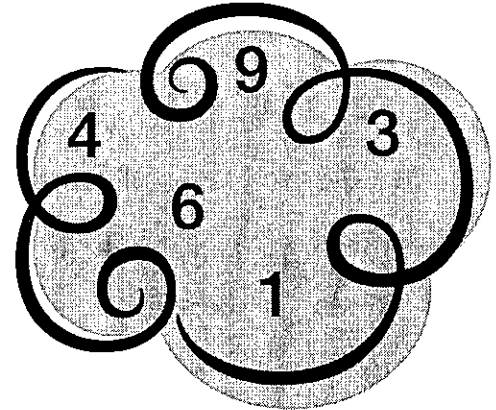
What is the sum? _____

$$\begin{array}{r}
 \square \quad \square \quad \square \\
 + \quad \square \quad \square \quad \square \\
 \hline
 \square \quad \square \quad \square
 \end{array}$$

Practice It Right



Put the squares with numbers from the cloud.
Use each number once in each problem.



Put one number in each square so that
the sum is between 600 and 700.
There is a 5 in the tens place in the sum.

What is the sum? _____

$$\begin{array}{r}
 \square \square \square \\
 + \square \mathbf{6} \square \\
 \hline
 _ _ _
 \end{array}$$

Put one number in each square so that
the sum is between 500 and 600.
There is a 6 in the tens place in the sum.

What is the sum? _____

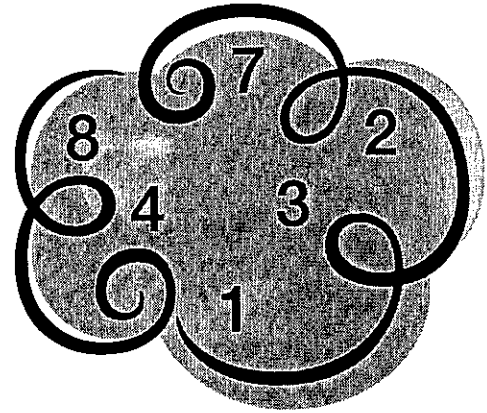
$$\begin{array}{r}
 \square \square \mathbf{6} \\
 + \square \square \square \\
 \hline
 _ _ _
 \end{array}$$

Name _____

Place It Right



Fill in the squares with numbers from the cloud.
Use each number once in each problem.



- Put one number in each square so that
 - the sum is between 300 and 400.
 - there is an 8 in the tens place in the sum.

What is the sum? _____

$$\begin{array}{r} \square \square \square \\ + \square \square \square \\ \hline _ _ _ \end{array}$$

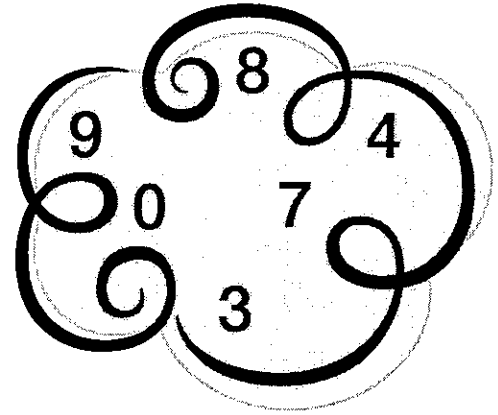
- Put one number in each square so that
 - the sum is between 1,000 and 1,100.
 - there is a 4 in the ones place in the sum.

What is the sum? _____

$$\begin{array}{r} \square \square \square \\ + \square \square \square \\ \hline _ _ _ \end{array}$$

Place It Right

Fill in the squares with numbers from the cloud.
Use each number once in each problem.



1. Put one number in each square so that
- the sum is between 700 and 800.
 - the ones digit in the sum is the same as the hundreds digit in the sum.

What is the sum? _____

$$\begin{array}{r}
 \square \square \square \\
 + \square \square \square \\
 \hline
 _ _ _
 \end{array}$$

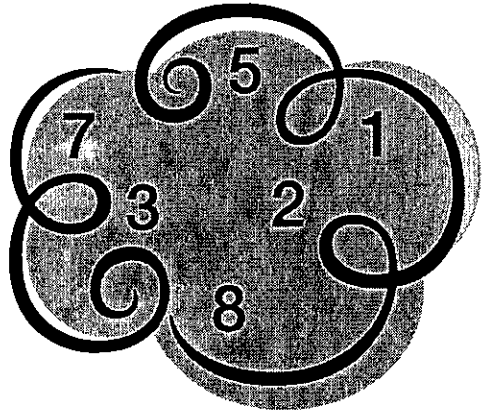
2. Put one number in each square so that
- the sum is between 1,400 and 1,500.
 - the thousands digit in the sum is 7 less than the ones digit in the sum.

What is the sum? _____

$$\begin{array}{r}
 \square \square \square \\
 + \square \square \square \\
 \hline
 _ _ _
 \end{array}$$

Place It Right

Fill in the squares with numbers from the cloud.
Use each number once in each problem.



- Put one number in each square so that
 - the sum is between 400 and 500.
 - the tens digit and the ones digit in the sum are the same.

What is the sum? _____

$$\begin{array}{r}
 \square \square \square \\
 + \square \square \square \\
 \hline
 _ _ _
 \end{array}$$

- Put one number in each square so that
 - the sum is between 1,500 and 1,600.
 - the tens digit in the sum is 5 less than the ones digit in the sum.

What is the sum? _____

$$\begin{array}{r}
 \square \square \square \\
 + \square \square \square \\
 \hline
 _ _ _ _
 \end{array}$$

Solutions

Place It Right 1

1. 1,443

2. 354

Place It Right 2

1. 793

2. 397

Place It Right 3

1. 659

2. 560

Place It Right 4

1. 385

2. 1,024

Place It Right 5

1. 787

2. 1,408

Place It Right 6

1. 422

2. 1,538

Grids

1

Same shapes are same numbers.

Different shapes are different numbers.

Numbers at the ends of rows and bottoms of columns are sums.

		Column			
		1	2	3	
Row	1	□	△	△	8
	2	□	□	□	18
	3	△	□	4	11
		13	13	11	

1. What number is □? _____

2. What number is △? _____

3. Explain how you found the numbers. _____







Name _____


Grids 2


Same shapes are same numbers.

Different shapes are different numbers.

Numbers at the ends of rows and bottoms of columns are sums.

		Column			
		1	2	3	
Row	1	6			19
	2				27
	3	8	3		15
		23	16	22	

1. What number is ? _____

2. What number is ? _____







3. Explain how you found the numbers. _____


Grids 3


Same shapes are same numbers.

Different shapes are different numbers.

Numbers at the ends of rows and bottoms of columns are sums.

		Column			
		1	2	3	
Row	1		3		16
	2			4	17
	3			5	17
		18	16	16	

1. What number is ? _____

2. What number is ? _____

3. Explain how you found the numbers. _____

Name _____









Variable



Grids 4

Same shapes are same numbers.

Different shapes are different numbers.

Numbers at the ends of rows and bottoms of columns are sums.

	Column			
	1	2	3	
1				8
2			5	11
3				10
	12	8	9	

1. What number is ? _____
2. What number is ? _____
3. Explain how you found the numbers. _____

Grids 5

Same shapes are same numbers.

Different shapes are different numbers.

Numbers at the ends of rows and bottoms of columns are sums.

		Column			
		1	2	3	
Row	1	9	1	<input style="width: 30px; height: 30px;" type="text"/>	12
	2	<input style="width: 30px; height: 30px;" type="text"/>	<input style="width: 30px; height: 30px;" type="text"/>	<input style="width: 30px; height: 30px;" type="text"/>	18
	3	<input style="width: 30px; height: 30px;" type="text"/>	<input style="width: 30px; height: 30px;" type="text"/>	7	11
		13	11	17	

1. What number is ? _____

2. What number is ? _____









3. Explain how you found the numbers. _____


Grids 6


Same shapes are same numbers.

Different shapes are different numbers.

Numbers at the ends of rows and bottoms of columns are sums.

		Column			
		1	2	3	
Row	1				15
	2				11
	3			4	10
		11	13	12	

1. What number is ? _____

2. What number is ? _____

3. Explain how you found the numbers. _____

Solutions

Grids 1

1. 6
2. 1
3. Possible answer: Since row 2 shows that three squares are 18, then one square is $18 \div 3$, or 6. Row 3 shows that triangle plus square plus 4 is 11. Replace the square with 6. Then triangle is $11 - 4 - 6$, or 1.

Grids 2

1. 9
2. 4
3. Possible answers: Since column 1 shows that 6 plus square plus 8 is 23, then square is $23 - 6 - 8$, or 9; or row 2 shows that 3 squares are 27, so square is $27 \div 3$, or 9. Row 3 shows that 8 plus 3 plus triangle is 15, so triangle is $15 - 8 - 3$, or 4.

Grids 3

1. 7
2. 6
3. Possible answer: Column 3 shows that square plus 4 plus 5 is 16. That means that square is $16 - 4 - 5$, or 7. Column 1 shows that 3 triangles are 18. Thus, triangle is $18 \div 3$, or 6.

Grids 4

1. 4
2. 2
3. Possible answer: Column 1 shows that three squares are 12, so one square is $12 \div 3$, or 4. Column 3 shows that triangle plus 5 plus triangle is 9. That means that two triangles equal $9 - 5$, or 4, and one triangle is $4 \div 2$, or 2.

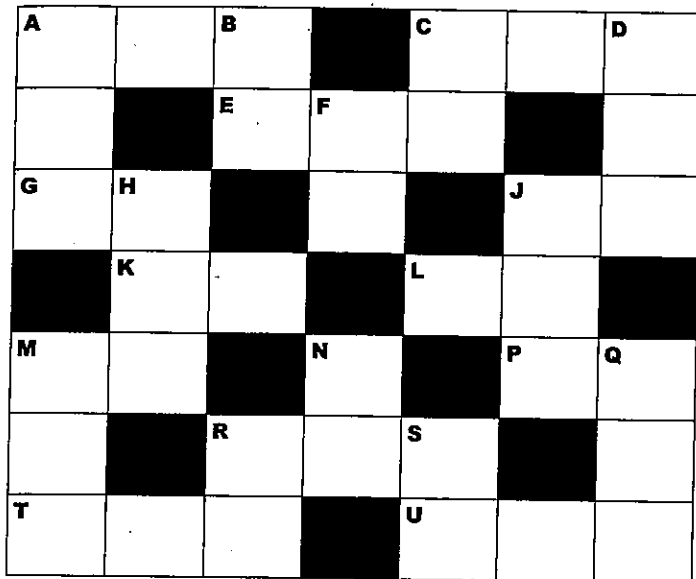
Grids 5

1. 2
2. 8
3. Possible answer: Row 1 shows that 9 plus 1 plus square is 12, so square is $12 - 9 - 1$, or 2. Column 3 shows that square plus triangle plus 7 is 17. Replace square with 2. Then 2 plus triangle plus 7 is 17, so triangle is $17 - 2 - 7$, or 8.

Grids 6

1. 3
2. 5
3. Possible answer: Row 3 shows that square plus square plus 4 is 10. Thus, two squares are $10 - 4$, or 6, and one square is $6 \div 2$, or 3. Row 1 shows that three triangles are 15, so one triangle is $15 \div 3$, or 5.

CROSS-NUMBER PUZZLE 1



Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

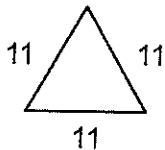
ACROSS:

A. $796 - 325$

C. The number of cents in 4 quarters and 6 pennies

E. A number that reads the same backwards and forwards

G. The perimeter of the triangle



J. An odd number

K. $26 + 26$

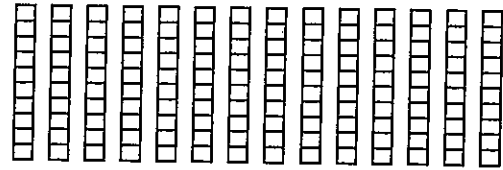
L. The number that means 4 tens and 12 ones

M. The next number in the pattern:
15, 18, 21, 24,

P. A number between 80 and 90

R. A number whose digits add to 4

T. The number shown by the blocks



U. The number that means 14 tens

DOWN:

A. Choose the least number:
543, 453, 553, 455

B. The number of unit squares in the array



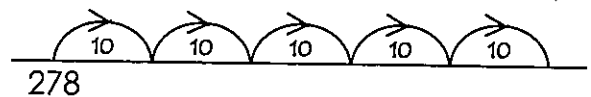
C. 2×9

D. $432 + 265$

F. $70 - 6$

H. A number with three odd digits

J. The number reached on the last hop



M. Write in standard form:
 $200 + 90 + 1$

N. The number of minutes in 1 hour and 30 minutes

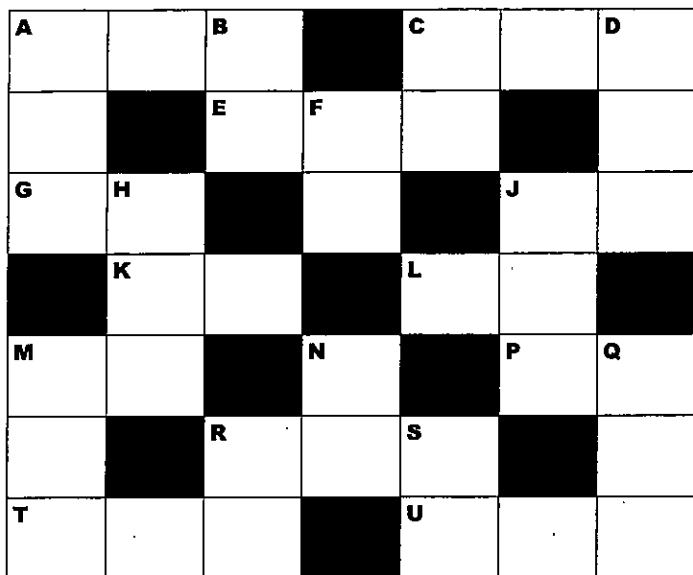
Q. The hundred that 578 is closest to



R. $7 + 3 + 4 + 6 + 1 + 9$

S. $49 + \square = 60$

CROSS-NUMBER PUZZLE 2



Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

- A. Write in standard form:
 $700 + 20 + 1$

- C. The number of cents in 4 quarters and 1 nickel

- E. A number with two digits the same

- G. The number of minutes in 1 hour and 29 minutes

- J. An even number

- K. The perimeter of the square

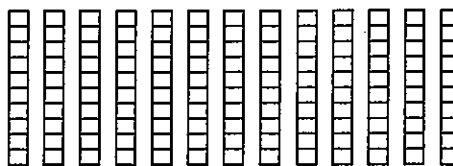
- L. $37 + 37$

- M. The number that means 6 tens and 14 ones

- P. A number less than 20

- R. A number between 300 and 400

T. The number shown by the blocks



U. The number that means 13 groups of ten

DOWN:

- A. $425 + 373$

- B. The number that means 2 groups of eight

- C. 2×8

- D. The hundred that 543 is closest to

- F. $58 + \square = 70$

- H. A number whose digits add to 21

- J. The number reached on the last hop

- M. $986 - 235$

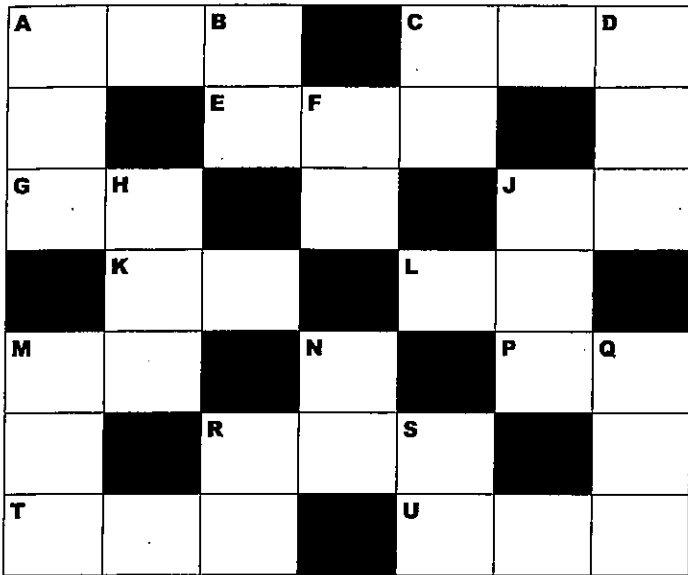
- N. The next number in the pattern:
36, 40, 44, 48,

- Q. Choose the greatest number:
780, 807, 708, 870

- R. $4 + 6 + 2 + 8 + 7 + 3$

- S. $80 - 9$

CROSS-NUMBER PUZZLE 3



Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

A. The number that is 2 less than 200

C. Choose the greatest number:
738, 837, 783, 873

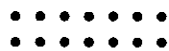
E. A number whose digits add to 15

G. $60 - 7$

J. The next number in the pattern:
82, 80, 78, 76,

K. The number of minutes in 1 hour
and 35 minutes

L. The number of dots in the array



M. 2×7

P. $35 + \square = 50$

R. $503 + 245$

T. The number that means 10 tens

U. The number that means 15 tens

DOWN:

A. The number of cents in 4 quarters,
2 dimes and 1 nickel

B. $58 + 28$

C. The number that means 7 tens
and 16 ones

D. $284 + 10 + 10 + 10 + 10$

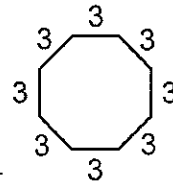
F. $3 + 7 + 5 + 5 + 8 + 2 + 9$

H. A number between 300 and 400

J. A number with two odd digits

M. $996 - 865$

N. The perimeter
of the octagon



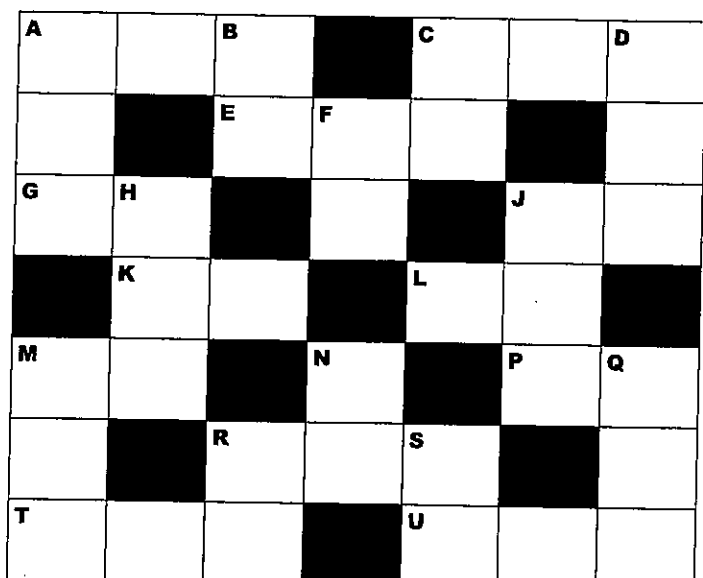
Q. The hundred that 468 is closest to



R. An even number

S. A number between 80 and 90

CROSS-NUMBER PUZZLE 4



Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

- A. The number of cents in 4 quarters, 4 dimes and 3 pennies
- C. The number that is two more than 579
- E. A number whose digits add to 8
- G. $8 + 2 + 3 + 7 + 1 + 9 + 4$
- J. The next number in the pattern: 48, 51, 54, 57,
- K. $28 + 25$
- L. The number that means 4 tens and 13 ones
- M. The number of minutes in 1 hour and 32 minutes
- P. A number with both digits the same

R. A number that reads the same backwards and forwards

T. $652 + 224$

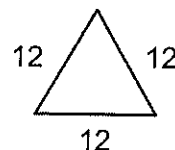
U. The hundred that 644 is closest to



DOWN:

A. $586 - 403$

B. The perimeter of the triangle



C. The number that means 5 tens

D. The number that means 15 tens

F. $27 + \square = 50$

H. A number with two even digits

J. A number with two odd digits

M. $878 + 10 + 10 + 10 + 10$

N. $90 - 6$

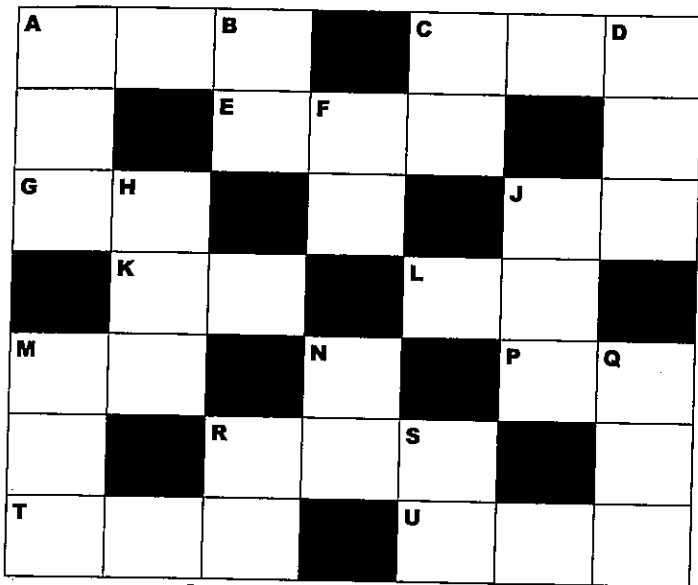
Q. Choose the greatest number: 890, 908, 809, 980

R. The number of unit squares in the array



S. 2×8

CROSS-NUMBER PUZZLE 5



Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

A. Write in standard form:
 $900 + 30 + 7$

C. $999 - 236$

E. A number between 500 and 600

G. An odd number

J. The next number in the pattern:
48, 52, 56, 60,

K. 2×9

L. The number that means 2 groups of nine

M. A number with two odd digits

P. $100 - 8$

R. A number whose digits add to 14

T. The number that means 10 tens

U. The number that means 16 tens

DOWN:

A. The number that is 2 less than 950

B. $48 + 27$

C. The number that means 6 tens and 15 ones

D. Choose the least number:
342, 423, 324, 432

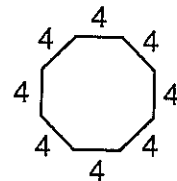
F. $64 + \square = 90$

H. $675 + 10 + 10 + 10 + 10$

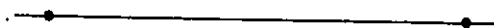
J. A number less than 700

M. The number of cents in 4 quarters, 4 dimes and 1 penny

N. The perimeter of the octagon



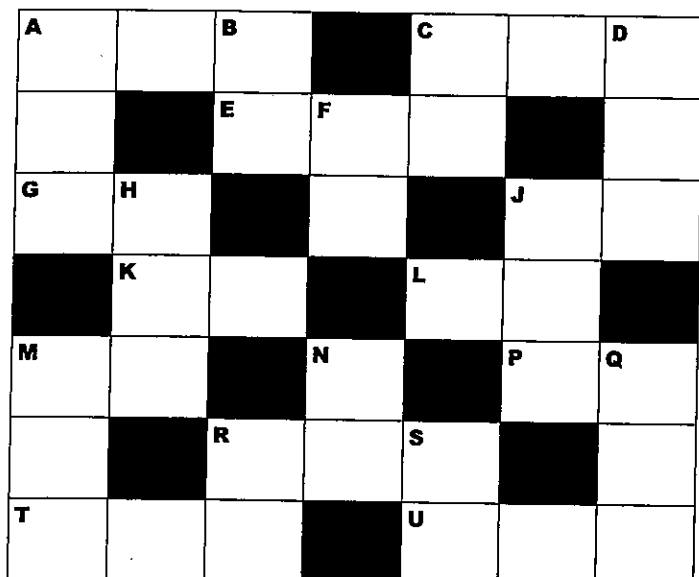
Q. The hundred that 154 is closest to



R. $6 + 4 + 7 + 3 + 8 + 2$

S. The number of minutes in 1 hour and 31 minutes

CROSS-NUMBER PUZZLE 6



Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

A. The number that means 4 hundreds, 6 tens and 18 ones

C. Write in standard form:
400 + 60 + 18

E. A number with two even digits

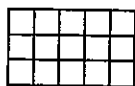
G. An odd number

J. Since $14 - 7 = 7$,
then $44 - 7 = \square$

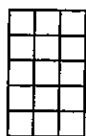
K. $\square + 24 = 50$

L. Separate 20 marbles into groups of 2.
How many groups of 2 are there?

M. The number of unit squares in the array



P. The number of unit squares in the array



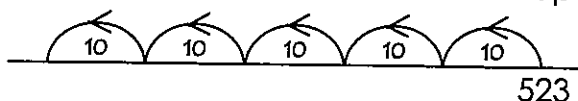
R. A number that reads the same backwards and forwards

T. The number that means 19 tens

U. The number that means 1 hundred and 9 tens

DOWN:

A. The number reached on the last hop



B. $47 + 36$

C. $60 - 18$

D. $787 + 40$

F. The next number in the pattern:
96, 93, 90, 87, \square

H. The number of cents in 5 quarters

J. A number whose digits add to 4

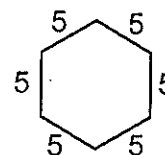
M. The number of minutes in 2 hours and 1 minute

N. $697 - 643$

Q. The decade 568 is closest to

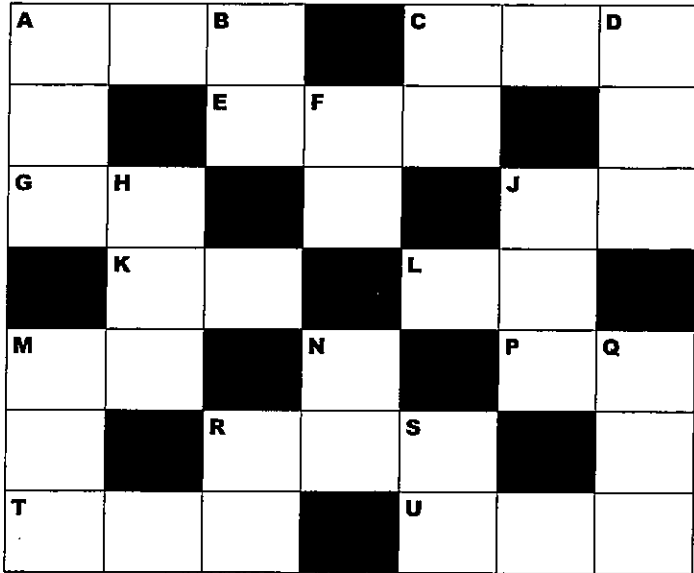


R. The perimeter of the hexagon



S. $2 + 8 + 1 + 3 + 6 + 7 + 4$

CROSS-NUMBER PUZZLE 7



Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

A. The number that means 7 hundreds, 4 tens and 19 ones

C. Write in standard form:
700 + 40 + 19

E. The decade that 764 is closest to



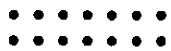
G. $60 = 37 + \square$

J. Since $12 - 6 = 6$,

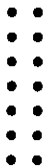
then $52 - 6 = \square$

K. Share 22 marbles between 2 friends.
How many does each friend receive?

L. The number of dots on the array



M. The number of dots on the array



P. $7 + 4 + 9 + 6 + 1 + 2 + 8$

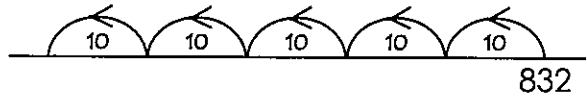
R. A number with two even digits

T. The number of cents in 17 dimes

U. The number of cents in 1 dollar and 7 dimes

DOWN:

A. The number reached on the last hop



B. An odd number

C. An even number

D. $876 + 50$

F. $497 - 435$

H. A number whose digits add to 8

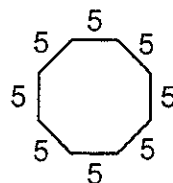
J. A number with two digits the same

M. The number of minutes in 2 hours and 11 minutes

N. The next number in the pattern:
91, 89, 87, 85, \square

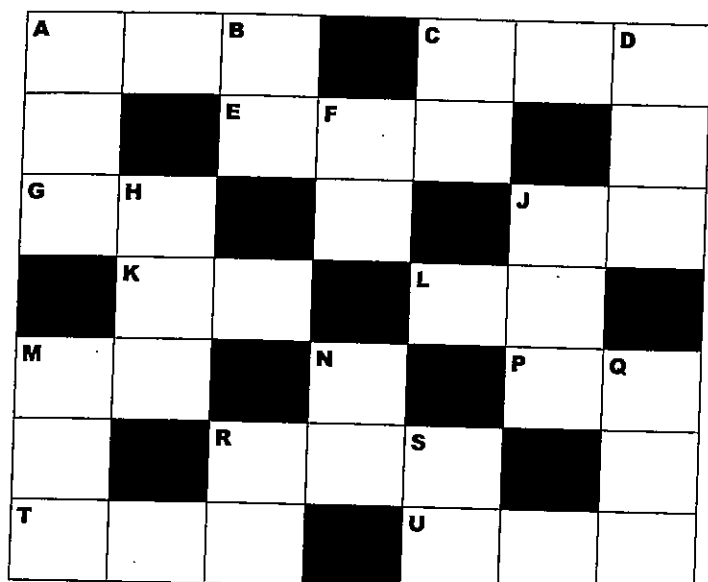
Q. $436 + 354$

R. The perimeter of the octagon



S. $80 - 19$

CROSS-NUMBER PUZZLE 8



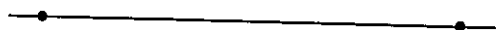
Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

A. $447 + 447$

C. Write in standard form:
 $800 + 80 + 14$

E. The decade that 527 is closest to



G. $90 - 27$

J. The next number in the pattern:
112, 108, 104, 100,

K. Since $13 - 6 = 7$,
then $53 - 6 =$

L. 2×9

M. 9×2

P. $3 + 8 + 7 + 2 + 4 + 1 + 6$

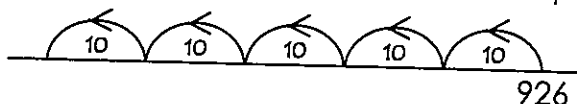
R. A number whose digits add to 8

T. The number that means 25 tens

U. The number that means 2 hundreds and 5 tens

DOWN:

A. The number reached on the last hop



B. An odd number

C. An even number

D. $999 - 583$

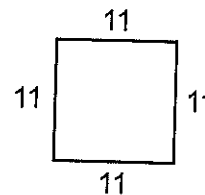
F. + 34 = 70

H. A number with two even digits

J. A number with two odd digits

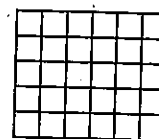
M. The number of cents in 5 quarters,
1 nickel and 2 pennies

N. The perimeter
of the square



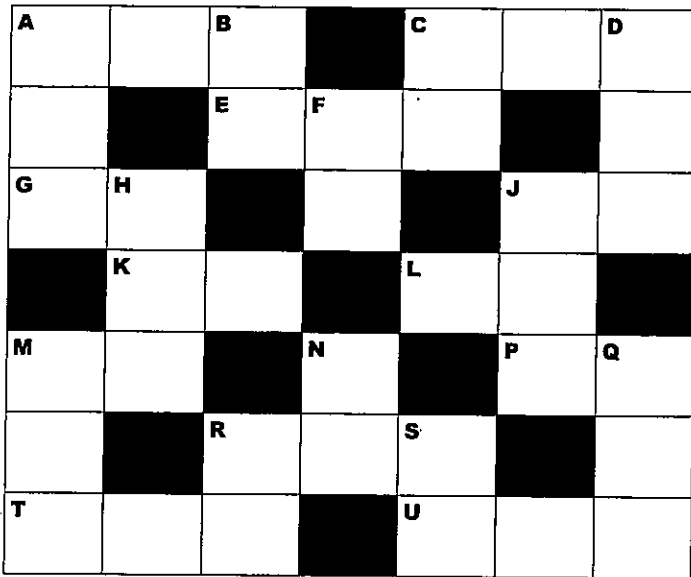
Q. The number of minutes in 2 hours
and 20 minutes

R. The number of
unit squares in
the array



S. Separate 24 marbles into groups of 2.
How many groups of 2 are there?

CROSS-NUMBER PUZZLE 9



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ACROSS:

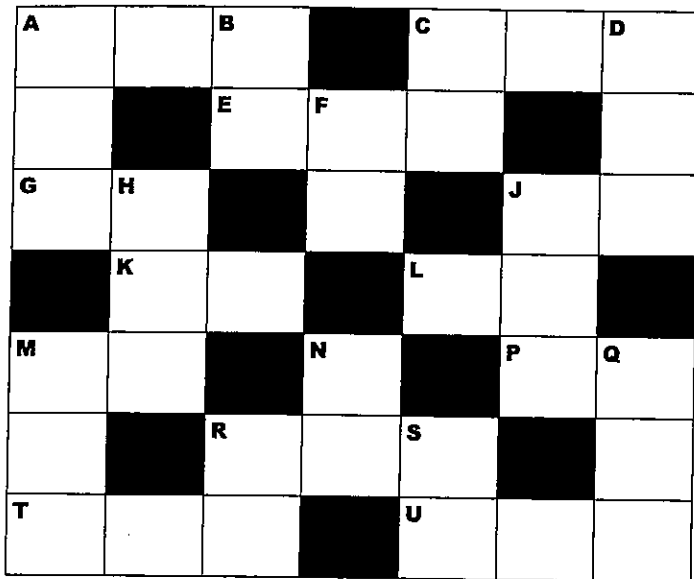
- A. The number of cents in 5 quarters and 8 pennies
- C. $427 - 10 - 10 - 10 - 10$
- E. A number that reads the same backwards and forwards
- G. A number less than 60
- J. An even number
- K. Since $15 - 7 = 8$,
then $35 - 7 = \square$
- L. Share 24 marbles between 2 friends.
How many does each friend receive?
- M. A number between 60 and 70
- P. $6 + 9 + 4 + 3 + 8 + 7 + 2$
- R. A number whose digits add to 15

- T. The number of cents in 34 dimes
- U. The number of cents in 3 dollars and 4 dimes

DOWN:

- A. The number of minutes in 2 hours and 25 minutes
- B. 5×7
- C. 7×5
- D. The decade that 764 is closest to
- F. $60 - 36$
- H. The number that means 7 hundreds, 1 ten and 13 ones
- J. Write in standard form:
 $700 + 10 + 13$
- M. $563 + 50$
- N. The perimeter of the pentagon
- Q. $634 + 356$
- R. The next number in the pattern:
 $44, 48, 52, 56, \square$
- S. $80 = \square + 37$

CROSS-NUMBER PUZZLE 10



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DOWN:

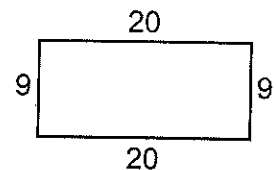
A. $829 - 10 - 10 - 10 - 10$

B. Since $13 - 6 = 7$,
then $73 - 6 = \square$

C. $495 - 423$

D. $585 + 50$

F. The perimeter of the rectangle



H. The number of minutes in 2 hours and 24 minutes

J. A number that reads the same backwards and forwards

M. The number of cents in 5 quarters and 1 dime

N. $2 + 4 + 8 + 6 + 7 + 9 + 3$

Q. The decade that 917 is closest to



R. The next number in the pattern:
 $76, 72, 68, 64, \square$

S. $70 - 35$

ACROSS:

A. $528 + 218$

C. Write in standard form:
 $700 + 30 + 16$

E. A number whose digits add to 14

G. A number between 90 and 100

J. 9×5

K. 5×9

L. Separate 26 marbles into groups of 2.
How many groups of 2 are there?

M. An even number

P. $\square + 41 = 90$

R. A number with two odd digits

T. The number that means 58 tens

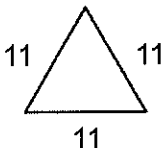
U. The number that means 5 hundreds and 8 tens

CROSS-NUMBER PUZZLE 1

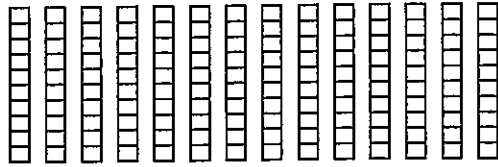
^A 4	7	^B 1		^C 1	0	^D 6
5		^E 8	^F 6	8		9
^G 3	^H 3		4		^J 3	7
	^K 5	2		^L 5	2	
^M 2	7		^N 9		^P 8	^Q 6
9		^R 3	0	^S 1		0
^T 1	4	0		^U 1	4	0

Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

- A. $796 - 325$
- C. The number of cents in 4 quarters and 6 pennies
- E. A number that reads the same backwards and forwards
- G. The perimeter of the triangle
- 
- J. An odd number
- K. $26 + 26$
- L. The number that means 4 tens and 12 ones
- M. The next number in the pattern:
15, 18, 21, 24,
- P. A number between 80 and 90
- R. A number whose digits add to 4

T. The number shown by the blocks



U. The number that means 14 tens

DOWN:

A. Choose the least number:
543, 453, 553, 455

B. The number of unit squares in the array



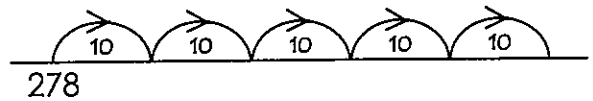
C. 2×9

D. $432 + 265$

F. $70 - 6$

H. A number with three odd digits

J. The number reached on the last hop



M. Write in standard form:
 $200 + 90 + 1$

N. The number of minutes in 1 hour and 30 minutes

Q. The hundred that 578 is closest to



R. $7 + 3 + 4 + 6 + 1 + 9$

S. $49 + \square = 60$

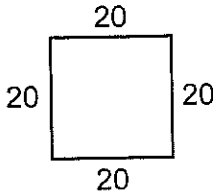
CROSS-NUMBER PUZZLE 2

A	7	2	B	1	C	1	0	D	5	
	9		E	6	F	1	6		0	
G	8	H	9		2		J	6	0	
		K	8	0		L	7	4		
M	7	4		N	5		P	1	Q	8
	5		R	3	2	S	7		7	
T	1	3	0		U	1	3	0		

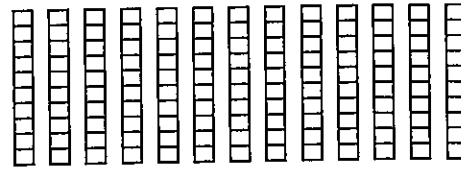
Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

- A. Write in standard form:
 $700 + 20 + 1$
- C. The number of cents in 4 quarters and 1 nickel
- E. A number with two digits the same
- G. The number of minutes in 1 hour and 29 minutes
- J. An even number
- K. The perimeter of the square


- L. $37 + 37$
- M. The number that means 6 tens and 14 ones
- P. A number less than 20
- R. A number between 300 and 400

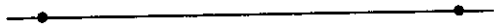
T. The number shown by the blocks

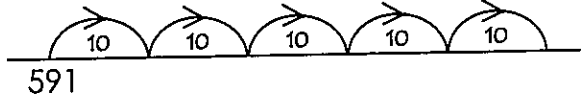


U. The number that means 13 groups of ten

DOWN:

- A. $425 + 373$
- B. The number that means 2 groups of eight
- C. 2×8
- D. The hundred that 543 is closest to


- F. $58 + \square = 70$
- H. A number whose digits add to 21
- J. The number reached on the last hop


- M. $986 - 235$
- N. The next number in the pattern:
36, 40, 44, 48,
- Q. Choose the greatest number:
780, 807, 708, 870
- R. $4 + 6 + 2 + 8 + 7 + 3$
- S. $80 - 9$

CROSS-NUMBER PUZZLE 3

A	1	9	B		C	8	7	D	3	
	2		E	6	F	3	6		2	
G	5	H	3		9		J	7	4	
		K	9	5		L	1	4		
M	1	4		N	2		P	1	Q	5
	3		R	7	4	S	8		0	
T	1	0	0		U	1	5	0		

Cross-Number Discovery Puzzles 4 - © Cella Baron 2013

ACROSS:

A. The number that is 2 less than 200

C. Choose the greatest number:
738, 837, 783, 873

E. A number whose digits add to 15

G. $60 - 7$

J. The next number in the pattern:
82, 80, 78, 76,

K. The number of minutes in 1 hour
and 35 minutes

L. The number of dots
in the array

•	•	•	•	•	•
•	•	•	•	•	•

M. 2×7

P. $35 + \square = 50$

R. $503 + 245$

T. The number that means 10 tens

U. The number that means 15 tens

DOWN:

A. The number of cents in 4 quarters,
2 dimes and 1 nickel

B. $58 + 28$

C. The number that means 7 tens
and 16 ones

D. $284 + 10 + 10 + 10 + 10$

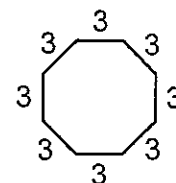
F. $3 + 7 + 5 + 5 + 8 + 2 + 9$

H. A number between 300 and 400

J. A number with two odd digits

M. $996 - 865$

N. The perimeter
of the octagon



Q. The hundred that 468 is closest to



R. An even number

S. A number between 80 and 90

CROSS-NUMBER PUZZLE 4

A	1	4	B	3		C	5	8	D	1
	8		E	6	F	2	0			5
G	3	H	4			3		J	6	0
		K	5	3			L	5	3	
M	9	2			N	8			P	9
	1			R	1	4		S	1	
T	8	7	6				U	6	0	0

Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

A. The number of cents in 4 quarters, 4 dimes and 3 pennies

C. The number that is two more than 579

E. A number whose digits add to 8

G. $8 + 2 + 3 + 7 + 1 + 9 + 4$

J. The next number in the pattern:
48, 51, 54, 57,

K. $28 + 25$

L. The number that means 4 tens and 13 ones

M. The number of minutes in 1 hour and 32 minutes

P. A number with both digits the same

R. A number that reads the same backwards and forwards

T. $652 + 224$

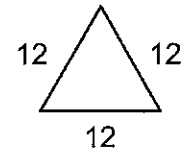
U. The hundred that 644 is closest to



DOWN:

A. $586 - 403$

B. The perimeter of the triangle



C. The number that means 5 tens

D. The number that means 15 tens

F. $27 + \square = 50$

H. A number with two even digits

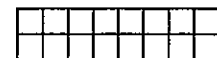
J. A number with two odd digits

M. $878 + 10 + 10 + 10 + 10$

N. $90 - 6$

Q. Choose the greatest number:
890, 908, 809, 980

R. The number of unit squares in the array



S. 2×8

CROSS-NUMBER PUZZLE 5

A	9	3	B	7	C	7	6	D	3	
	4		E	5	F	2	5		2	
G	8	H	7		6		J	6	4	
	K	1	8		L	1	8			
M	1	5		N	3		P	9	Q	2
	4		R	3	2	S	9			0
T	1	0	0		U	1	6			0

Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

A. Write in standard form:
 $900 + 30 + 7$

C. $999 - 236$

E. A number between 500 and 600

G. An odd number

J. The next number in the pattern:
48, 52, 56, 60,

K. 2×9

L. The number that means 2 groups of nine

M. A number with two odd digits

P. $100 - 8$

R. A number whose digits add to 14

T. The number that means 10 tens

U. The number that means 16 tens

DOWN:

A. The number that is 2 less than 950

B. $48 + 27$

C. The number that means 6 tens and 15 ones

D. Choose the least number:
342, 423, 324, 432

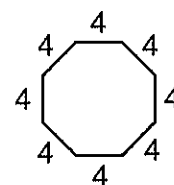
F. $64 + \square = 90$

H. $675 + 10 + 10 + 10 + 10$

J. A number less than 700

M. The number of cents in 4 quarters, 4 dimes and 1 penny

N. The perimeter of the octagon



Q. The hundred that 154 is closest to



R. $6 + 4 + 7 + 3 + 8 + 2$

S. The number of minutes in 1 hour and 31 minutes

CROSS-NUMBER PUZZLE 6

A	4	7		B	8		C	4	7	D	8
	7		E	3	F	8	2			2	
G	3	H	1			4		J	3	7	
	K	2	6		L	1	0				
M	1	5		N	5		P	1	Q	5	
	2		R	3	4	S	3			7	
T	1	9	0		U	1	9	0			

Cross-Number Discovery Puzzles 4 - © Cella Baron 2013

ACROSS:

A. The number that means 4 hundreds, 6 tens and 18 ones

C. Write in standard form:
 $400 + 60 + 18$

E. A number with two even digits

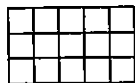
G. An odd number

J. Since $14 - 7 = 7$,
then $44 - 7 = \square$

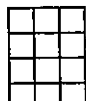
K. $\square + 24 = 50$

L. Separate 20 marbles into groups of 2.
How many groups of 2 are there?

M. The number of unit squares in the array



P. The number of unit squares in the array



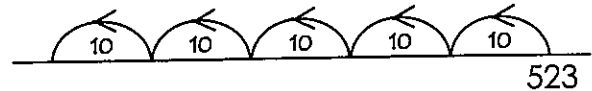
R. A number that reads the same backwards and forwards

T. The number that means 19 tens

U. The number that means 1 hundred and 9 tens

DOWN:

A. The number reached on the last hop



B. $47 + 36$

C. $60 - 18$

D. $787 + 40$

F. The next number in the pattern:
 $96, 93, 90, 87, \square$

H. The number of cents in 5 quarters

J. A number whose digits add to 4

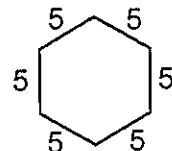
M. The number of minutes in 2 hours and 1 minute

N. $697 - 643$

Q. The decade 568 is closest to



R. The perimeter of the hexagon



S. $2 + 8 + 1 + 3 + 6 + 7 + 4$

CROSS-NUMBER PUZZLE 7

A 7	5	B 9		C 7	5	D 9
8		E 7	F 6	0		2
G 2	H 3		2		J 4	6
	K 1	1		L 1	4	
M 1	4		N 8		P 3	Q 7
3		R 4	3	S 6		9
T 1	7	0		U 1	7	0

Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

ACROSS:

A. The number that means 7 hundreds, 4 tens and 19 ones

C. Write in standard form:
 $700 + 40 + 19$

E. The decade that 764 is closest to

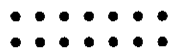


G. $60 = 37 + \square$

J. Since $12 - 6 = 6$,
 then $52 - 6 = \square$

K. Share 22 marbles between 2 friends.
 How many does each friend receive?

L. The number of dots on the array



M. The number of dots on the array



P. $7 + 4 + 9 + 6 + 1 + 2 + 8$

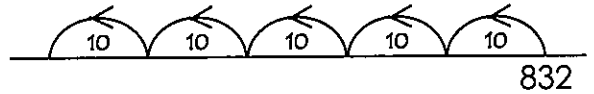
R. A number with two even digits

T. The number of cents in 17 dimes

U. The number of cents in 1 dollar and 7 dimes

DOWN:

A. The number reached on the last hop



B. An odd number

C. An even number

D. $876 + 50$

F. $497 - 435$

H. A number whose digits add to 8

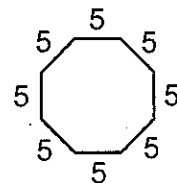
J. A number with two digits the same

M. The number of minutes in 2 hours and 11 minutes

N. The next number in the pattern:
 $91, 89, 87, 85, \square$

Q. $436 + 354$

R. The perimeter of the octagon



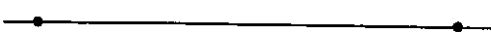
S. $80 - 19$

CROSS-NUMBER PUZZLE 8

A	8	9	B	4	C	8	9	D	4	
	7		E	5	F	3	0		1	
G	6	H	3		6		J	9	6	
		K	4	7		L	1	8		
M	1	8		N	4		P	3	Q	1
	3		R	3	4	S	1		4	
T	2	5	0		U	2	5	0		

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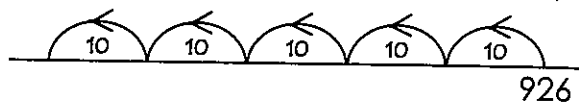
ACROSS:

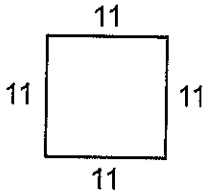
- A.** $447 + 447$
- C.** Write in standard form:
 $800 + 80 + 14$
- E.** The decade that 527 is closest to

- G.** $90 - 27$
- J.** The next number in the pattern:
112, 108, 104, 100,
- K.** Since $13 - 6 = 7$,
then $53 - 6 =$
- L.** 2×9
- M.** 9×2
- P.** $3 + 8 + 7 + 2 + 4 + 1 + 6$
- R.** A number whose digits add to 8

- T.** The number that means 25 tens
- U.** The number that means 2 hundreds and 5 tens

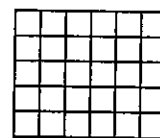
DOWN:

- A.** The number reached on the last hop



- B.** An odd number
- C.** An even number
- D.** $999 - 583$
- F.** + 34 = 70
- H.** A number with two even digits
- J.** A number with two odd digits
- M.** The number of cents in 5 quarters, 1 nickel and 2 pennies
- N.** The perimeter of the square

- Q.** The number of minutes in 2 hours and 20 minutes

- R.** The number of unit squares in the array



- S.** Separate 24 marbles into groups of 2. How many groups of 2 are there?

CROSS-NUMBER PUZZLE 9

A	1	3	B		C	3	8	D	7
	4		E	5	F	2	5		6
G	5	H	7		4		J	7	0
		K	2	8			L	1	2
M	6	3			N	5		P	3
	1		R	6	5	S	4		9
T	3	4	0			U	3	4	0

Cross-Number Discovery Puzzles 4 - © Cella Baron 2013

ACROSS:

- A.** The number of cents in 5 quarters and 8 pennies

- C.** $427 - 10 - 10 - 10 - 10$

- E.** A number that reads the same backwards and forwards

- G.** A number less than 60

- J.** An even number

- K.** Since $15 - 7 = 8$,
then $35 - 7 = \square$

- L.** Share 24 marbles between 2 friends.
How many does each friend receive?

- M.** A number between 60 and 70

- P.** $6 + 9 + 4 + 3 + 8 + 7 + 2$

- R.** A number whose digits add to 15

- T.** The number of cents in 34 dimes

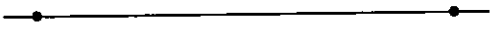
- U.** The number of cents in 3 dollars and 4 dimes

DOWN:

- A.** The number of minutes in 2 hours and 25 minutes

- B.** 5×7

- C.** 7×5

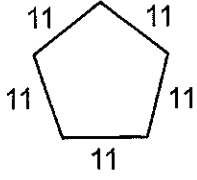
- D.** The decade that 764 is closest to


- F.** $60 - 36$

- H.** The number that means 7 hundreds, 1 ten and 13 ones

- J.** Write in standard form:
 $700 + 10 + 13$

- M.** $563 + 50$

- N.** The perimeter of the pentagon


- Q.** $634 + 356$

- R.** The next number in the pattern:
 $44, 48, 52, 56, \square$

- S.** $80 = \square + 37$

CROSS-NUMBER PUZZLE 10

A	7	4	B	6		C	7	4	D	6		
	8		E	7	F	5	2			3		
G	9	H	1			8		J	4	5		
		K	4	5			L	1	3			
M	1	4			N	3			P	4	Q	9
	3			R	6	9	S	3				2
T	5	8	0				U	5	8	0		

Cross-Number Discovery Puzzles 4 - © Celia Baron 2013

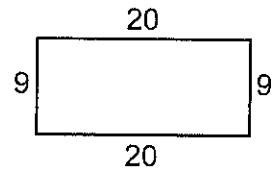
ACROSS:

- A. $528 + 218$
- C. Write in standard form:
 $700 + 30 + 16$
- E. A number whose digits add to 14
- G. A number between 90 and 100
- J. 9×5
- K. 5×9
- L. Separate 26 marbles into groups of 2.
How many groups of 2 are there?
- M. An even number
- P. + 41 = 90
- R. A number with two odd digits
- T. The number that means 58 tens
- U. The number that means 5 hundreds
and 8 tens

DOWN:

- A. $829 - 10 - 10 - 10 - 10$
- B. Since $13 - 6 = 7$,
then $73 - 6 = \square$
- C. $495 - 423$
- D. $585 + 50$

- F. The perimeter
of the rectangle



- H. The number of minutes in 2 hours
and 24 minutes
- J. A number that reads the same
backwards and forwards
- M. The number of cents in 5 quarters
and 1 dime
- N. $2 + 4 + 8 + 6 + 7 + 9 + 3$
- Q. The decade that 917 is closest to
- R. The next number in the pattern:
 $76, 72, 68, 64, \square$
- S. $70 - 35$

4.OA, MD Karl's Garden

Alignments to Content Standards: 4.MD.A.3 4.OA.A.3

Task

Karl's rectangular vegetable garden is 20 feet by 45 feet, and Makenna's is 25 feet by 40 feet. Whose garden is larger in area?

IM Commentary

The purpose of the task is for students to solve a multi-step multiplication problem in a context that involves area. In addition, the numbers were chosen to determine if students have a common misconception related to multiplication. Since addition is both commutative and associative, we can reorder or regroup addends any way we like. So for example,

$$\begin{aligned}20 + 45 &= 20 + (5 + 40) \\ &= (20 + 5) + 40 \\ &= 25 + 40\end{aligned}$$

Sometimes students are tempted to do something similar when multiplication is also involved; however this will get them into trouble since

$$20 \times (5 + 40) \neq (20 + 5) \times 40$$

This task was adapted from problem #20 on the 2011 American Mathematics Competition (AMC) 8 Test. Observers might be surprised that a task that was historically considered to be appropriate for middle school aligns to an elementary standard in the Common Core. In fact, if the factors were smaller (since in third grade students are limited to multiplication with 100; see 3.OA.3), this task would be appropriate for third

grade: "3.MD.7.b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning." For example, we could use a 5 ft by 12 ft garden, and a 7 ft by 10 ft garden to make this appropriate for a (challenging) third grade task. This earlier introduction to the connection between multiplication and area brings states who have adopted the Common Core in line with other high-achieving countries. The responses to the multiple choice answers for the original problem had the following distribution:

Choice	Answer	Percentage of Answers
(A)	Karl's garden is larger by 100 square feet.	5.43
(B)	Karl's garden is larger by 25 square feet.	1.99
(C)	The gardens are the same size.	12.75
(D)	Makenna's garden is larger by 25 square feet	2.86
(E)*	Makenna's garden is larger by 100 square feet.	76.59
Omit	--	0.37

Of the 153,485 students who participated, 72,648 or 47% were in 8th grade, 50,433 or 33% were in 7th grade, and the remainder were less than 7th grade. As the Common Core gets implemented, we will have an opportunity to compare how the generation of students who have had instructional opportunities shaped by the Common Core do on such tasks.

Solutions

[Edit this solution](#)

Solution: 1

We multiply the length and the width to find the area of each rectangular garden. Since

$$20 \times 45 = 900$$

we have that Karl's garden is 900 square feet.

We also know that

$$25 \times 40 = 1,000$$

so Makenna's garden is 1,000 square feet.

Finally, we can find the difference of the two areas

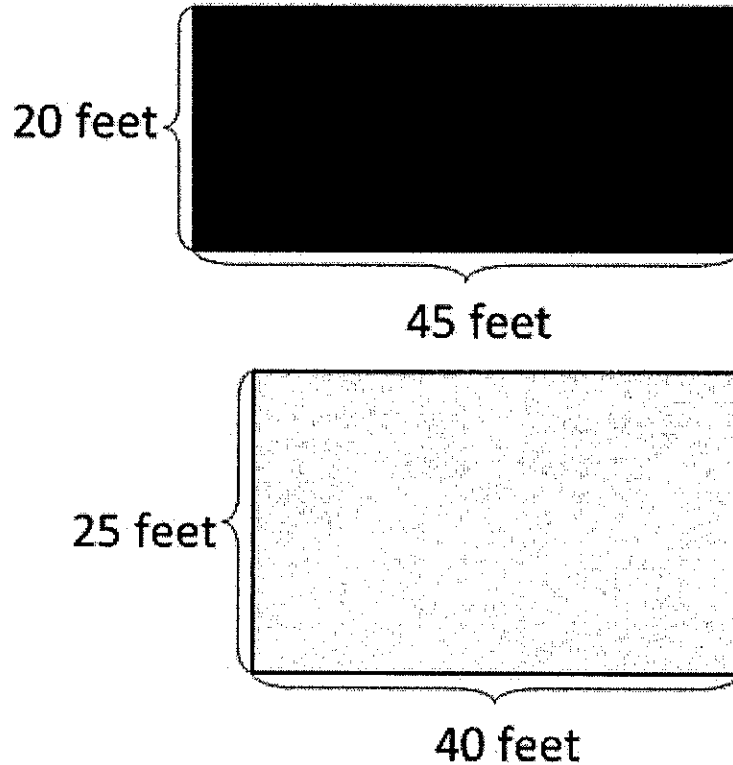
$$1,000 - 900 = 100$$

and we see that Makenna's garden is larger by 100 square feet.

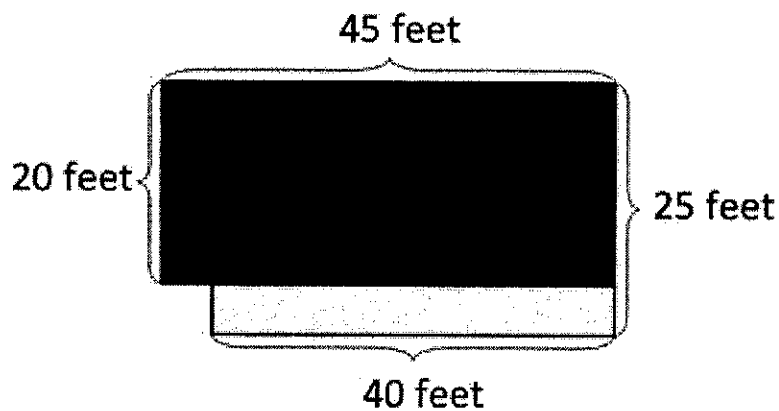
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Solution: With pictures

If we draw pictures to scale, we can see this difference visually. First, draw the two rectangles to represent the two gardens; the blue rectangle represents Karl's garden and the yellow rectangle represents Makenna's garden:



Now, draw them overlapping. In the picture below, the green region shows where the rectangles overlap, the blue strip on the left shows the part of the blue rectangle that is not overlapped by the yellow rectangle, and the yellow strip on the bottom shows the part of the yellow rectangle that is not overlapped by the blue rectangle:



Note that the blue strip is 20 feet by 5 feet and has an area of 100 square feet. The yellow strip is 40 feet by 5 feet and has an area of 200 square feet. Since

$$200 - 100 = 100$$

we have that Makenna's garden is 100 square feet larger than Karl's garden.

If students happen to display the misconception mentioned in the commentary, then these pictures could be used to help them understand why the areas are not equal.



4.OA, MD Karl's Garden
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Name: _____

Date: _____

4.MD.3

Kayleigh created a three-inch by four-inch rectangular artwork using 12 one-inch square tiles made of colored glass. She glued the colored tiles down to a piece of wood and put a frame around the tiles.

Kayleigh would like to make a larger art piece using 36 one-inch square tiles. The piece will need to be rectangular. What are all the possible dimensions she could use for her new artwork? Use the space to show your thinking, and then write the possible dimensions for Kayleigh's new piece of art.

Kayleigh does not have much wood for the frame of the new artwork. She would like to build her new art piece so it needs the least amount of wood for a frame. Draw and label a picture to show the dimensions she should use. Then, explain how you know that the dimensions you chose will require the least amount of framing.



Teacher notes:

Student learning targets for this task may include:

- I can explain the area and perimeter formula.
- I can use the formulas to solve problems.

- The dimensions the students may use for the first part are: 1 in by 36 in, 2 in by 18 in, 3 in by 12 in, and 4 in by 9 in, and 6 in by 6 in. NOTE: It is likely that some students may deliberately not include the 6 in by 6 in dimension, thinking that a square is not a rectangle. While this omission would be indicative of a need to clarify the student's understanding of rectangles and squares, this one error should not by itself cause a student to be marked down from a 3 to a 2.
- The correct answer for the second part is "6 in by 6 in". However, if a child discounts these dimensions since they form a square, they may use the dimensions "4 in by 9 in" instead.
- A frame around a 6 in by 6 in art work would technically *not* have a perimeter of 24 in because the ends of the frame would have to extend past the corners of the artwork. For the purposes of this task, however, students do not need to account for that extra extension of the frame. They simply need to be able to recognize that a figure with dimensions that are both "small" will result in a smaller perimeter, and they need to have correctly calculated the perimeter of the dimensions they chose.

Not yet: Student shows evidence of misunderstanding, incorrect concept or procedure.

Got It: Student essentially understands the target concept.

**Unsatisfactory:
Little
Accomplishment**

The task is attempted and some mathematical effort is made. There may be fragments of accomplishment but little or no success. Further teaching is required.

**Marginal:
Partial
Accomplishment**

Part of the task is accomplished, but there is lack of evidence of understanding or evidence of not understanding. Further teaching is required.

**Proficient:
Substantial
Accomplishment**

Student could work to full accomplishment with minimal feedback from teacher. Errors are minor. Teacher is confident that understanding is adequate to accomplish the objective with minimal assistance.

**Excellent:
Full
Accomplishment**

Strategy and execution meet the content, process, and qualitative demands of the task or concept. Student can communicate ideas. May have minor errors that do not impact the mathematics.

Adapted from Van de Walle, J. (2004) Elementary and Middle School Mathematics: Teaching Developmentally. Boston: Pearson Education, 65



Name: _____

4. NBT. 4

Write a subtraction problem for which the difference equals 1,557.
Show your work below.

Write an addition problem in which an addend is 1,557 and the sum will round to 5,000 when rounding to the nearest thousand.
Show your work below.



Name: _____

Date: _____

Write one number into each box to complete the subtraction problem shown.

0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

$$\begin{array}{r} 50\boxed{}6 \\ - \boxed{}48\boxed{} \\ \hline 16\boxed{}8 \end{array}$$



Teacher notes:

Student learning targets for this task may include

- I can add multi-digit numbers using the standard algorithm (starting in the ones place, then moving to the tens place, etc)
- I can subtract multi-digit numbers using the standard algorithm (starting in the ones place, then moving to the tens place, etc)

The authentic Smarter Balanced task is an online task. Students drag numbers into boxes to complete the subtraction equation.

- Students earn full accomplishment by correctly completing the equation.

$\begin{array}{r} 5096 \\ -3488 \\ \hline 1608 \end{array}$

Reviewing/analyzing the students' work can be helpful in determining whether students have a plan or strategy for finding the missing numbers or if students seem to be using a more random, guess-and-check style method. Student work will show if the student was able to recognize to regroup. Did he/she regroup the tens and ones correctly? Did he/she regroup the thousands and hundreds?

- If a particular student is struggling from the very start and seems like he or she will not be able to show any understanding, you may suggest that he/she begins by determining the missing number in the ones place (8). You can then indicate on the completed task that the student received teacher assistance.

<p>Not yet: Student shows evidence of misunderstanding, incorrect concept or procedure</p>	<p>Got It: Student essentially understands the target concept.</p>		
<p>Unsatisfactory: Little Accomplishment</p> <p>The task is attempted and some mathematical effort is made. There may be fragments of accomplishment but little or no success. Further teaching is required.</p>	<p>Marginal: Partial Accomplishment</p> <p>Part of the task is accomplished, but there is lack of evidence of understanding or evidence of not understanding. Further teaching is required.</p>	<p>Proficient: Substantial Accomplishment</p> <p>Student could work to full accomplishment with minimal feedback from teacher. Errors are minor. Teacher is confident that understanding is adequate to accomplish the objective with minimal assistance.</p>	<p>Excellent: Full Accomplishment</p> <p>Strategy and execution meet the content, process, and qualitative demands of the task or concept. Student can communicate ideas. May have minor errors that do not impact the mathematics.</p>

Adapted from Van de Walle, J. (2004) Elementary and Middle School Mathematics: Teaching Developmentally. Boston: Pearson Education, 65

