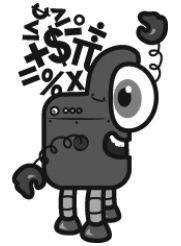


Name: \_\_\_\_\_

Mental Math

— #1 —



Start with the number 6.

6

Add half of 56.

3 3 4 0 9 4 8 4 1 1 (Circle your answer to double check you are correct.)

Divide that number in half.

4 4 3 3 2 7 1 7 6 1

Multiply by 10.

8 9 6 5 1 7 0 8 2 7

Divide that number in half.

3 0 4 2 7 8 6 8 5 2

Add 15.

4 3 1 0 0 1 1 4 7 0

Find the square root.

1 5 5 7 7 1 0 8 4 6

Add 27.

5 5 2 3 7 4 6 0 3 0

Multiply the tens digit by the ones digit. The product is your new number.

2 1 2 4 8 9 1 1 3 7

Round to the nearest ten.

1 0 7 1 2 0 3 2 0 8

Divide that number in half.

6 8 5 0 4 6 1 0 3 6

Name: \_\_\_\_\_

Cyrano de Bergerac had a prominent nose. As a matter of fact, it was so large that it was often the only thing people noticed about him. If one had to choose an adjective to describe Cyrano's nose, the best would be "tremendous!" Cyrano fell in love with a beautiful young woman, but knew she could never love someone so ugly. It's a long story, but in the end, Cyrano discovered that he was wrong. The young woman did love him. Cyrano's nose was seventeen centimeters long. One cm = 0.39 in. How long was Cyrano's nose in inches? Round your answer to the nearest tenth of an inch.

Clarita's sister works in an American company in Amarillo, Texas. She works thirty-eight hours every week and is paid \$11.27 per hour. She sends half of her weekly salary to Clarita to take care of their mother. How much money does Clarita's sister send home each week?

There is always a 1 to 1 correspondence between the number of guanines (G) and the number of cytosines (C) in a DNA molecule. The same is true of the relationship between adenine (A) and thymine (T). Of course professor Floop knows this. He analyzed a strand of DNA and determined the amounts of C and G it contained. If the molecule was 22% G, what was the percentage of A?

The initial population of protists in a culture is 4,738. The final population after one week was 9,106. The population increased by what percent over the week? Round your answer to the nearest hundredth of a percent.

Thirty-four percent of the plants in the park are broad-leaved plants and the rest are grasses. What percent of the plants are grasses?

$\frac{13}{14}$  is exactly five less than what real number written as an improper fraction?

Name: \_\_\_\_\_

Find the way from START to END by passing through EVERY number that is a multiple of eleven exactly ONCE. Cross off each box that is NOT a multiple of eleven. Yes, that means you have to go through ALL the multiple of eleven boxes. Wow!

You are not allowed to go diagonally. Good luck!

START	751	858	803	825	325	384	365	202	632
297	484	792	938	462	239	450	516	724	852
572	110	286	55	286	198	77	814	11	102
506	649	605	33	748	15	843	319	242	956
341	473	858	792	187	349	815	550	924	506
143	253	946	22	154	88	264	869	220	341
396	88	726	385	715	836	649	619	473	726
594	550	87	385	352	891	715	572	11	55
176	627	858	77	230	435	217	495	261	418
880	649	22	385	451	715	462	781	655	END

Name: \_\_\_\_\_

Which of the following fractions when added to  $\frac{1}{3}$  is  $\frac{11}{15}$ ?

$$\frac{1}{2}$$

$$\frac{3}{4}$$

$$\frac{5}{6}$$

$$\frac{6}{8}$$

$$\frac{2}{5}$$

Mr. King replaced one of the bulbs in the classroom with a 60-watt bulb that is supposed to last 14,500 hours. The bulb will be used 6 hours each day school is in session. In how many school days will this bulb need to be replaced again?

Name: \_\_\_\_\_

During the month of Ramadan, Muslims fast from sunrise to sunset. In New York City, the sun will rise at 7:04 a.m. and set at 6:38 p.m. on October 16. How long will the Muslims in New York City fast on that day?	The East Jackson Public Library celebrated Library Lovers Month by giving a book to each elementary student who read at least 10 books during the month. At the end of the month, 68 students had earned books. At a cost of \$7.48 per book, how much will it cost to give each student a book?	The fourth grade class was playing the fifth grade class a game of Five Dollars. The first team to reach 500 points would win. The fourth grade class has 39% of the points they need to win. How many more points does the fourth grade class need to win?
---	--	---

<p>Look at the chart. The number 36 is in the 3rd column of the 1st row.</p> <table border="1"><tr><td>20</td><td>28</td><td>36</td><td>44</td><td>52</td></tr><tr><td>60</td><td>68</td><td>76</td><td>84</td><td>92</td></tr><tr><td>100</td><td>108</td><td>116</td><td>124</td><td>132</td></tr><tr><td>140</td><td>148</td><td>156</td><td>164</td><td>172</td></tr></table> <p>What number is in the 3rd column of the 3rd row?</p> <p>If the pattern continues, what number would go in the 5th column of the 7th row?</p>	20	28	36	44	52	60	68	76	84	92	100	108	116	124	132	140	148	156	164	172	<p>Metro Messenger Service delivered one million, sixty-five thousand, one hundred twenty-eight messages last year. Write that number in standard form.</p>	$\begin{array}{r} 95 \\ - 31 \\ \hline \end{array}$
	20	28	36	44	52																	
	60	68	76	84	92																	
100	108	116	124	132																		
140	148	156	164	172																		
<p>Mary rolls a die. What is the chance of her rolling a 3?</p> <p>_____</p>	$\begin{array}{r} 30 \\ + 31 \\ \hline \end{array}$																					
<p>72 ÷ 12 = _____</p>	<p>Circle the greatest number:</p> <table><tr><td>3,641,089</td><td>217,059,436</td></tr><tr><td>36,908,574,120</td><td>275,239,658,704</td></tr></table>		3,641,089	217,059,436	36,908,574,120	275,239,658,704																
3,641,089	217,059,436																					
36,908,574,120	275,239,658,704																					

Name: \_\_\_\_\_

$56,849 + 45,524 =$ _____		April makes a basket for every three attempts that she makes. Amy needs five attempts to make a basket. Each basket is worth 2 points. If they each make 30 attempts, then what is the score?
$4 \times 8 =$	$60 \div 6 =$	

$4 \times 7 =$	How many yards are in 27 feet? _____ yards	$\begin{array}{r} 958 \\ - 774 \\ \hline \end{array}$
----------------	---	---

$2 \times 9 =$ _____	$4 \times 7 =$ _____	The letters E and O each have a line of symmetry. Name another letter between E and O that has a line of symmetry. _____	$\begin{array}{r} 427 \\ + 412 \\ \hline \end{array}$
----------------------	----------------------	---	---

$84 \div 12 =$	You have four digits to use in an addition problem: 6, 7, 3, and 2. Make up a problem where you have two 2-digit numbers. What is the largest sum you can make?	Circle the addition property for $80 + 73 = 73 + 80$ . associative property commutative property
$80 \div 8 =$		$1 \text{ cm} = 10 \text{ mm}$ $16 \text{ cm} =$ _____ $\text{mm}$

Name: \_\_\_\_\_

### What Words? Your Words!

Fill in the boxes with letters to make words. Each box is worth points. Earn points by filling in as many boxes as you can. Sum up the points you earn for each word.

Once you use a letter, cross it off on the bottom. You cannot use the same letter more than once.

Make a Word

Sum

1	2	4	6	8	14	20
S	I	M	P	L	E	

21

1	2	4	6	10
H	Y			

A B C D ~~E~~ F G ~~H~~ ~~I~~ J K ~~L~~ ~~M~~  
N O ~~P~~ Q R ~~S~~ T U V W X ~~Y~~ Z

Make a Word

Sum

1	2	4	6	10	16
T	A				

1	2	4	8	14	20
W	O				

~~A~~ B C D E F G H I J K L M  
N ~~O~~ P Q R S ~~T~~ U V ~~W~~ X Y Z

$14 \div 2 = \underline{\hspace{2cm}}$

$24 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

Erin got a new soccer shirt.  
Can you guess the number  
on the back of her shirt?

$11 \times 2 = \underline{\hspace{2cm}}$

It has two digits.  
The digits add up to 4.  
The larger digit is 2 more than  
the smaller digit.  
The number is odd.

$72 \div 8 = \underline{\hspace{2cm}}$

$110 \div 10 = \underline{\hspace{2cm}}$

Circle the digit in the tenths place.

6,231.285

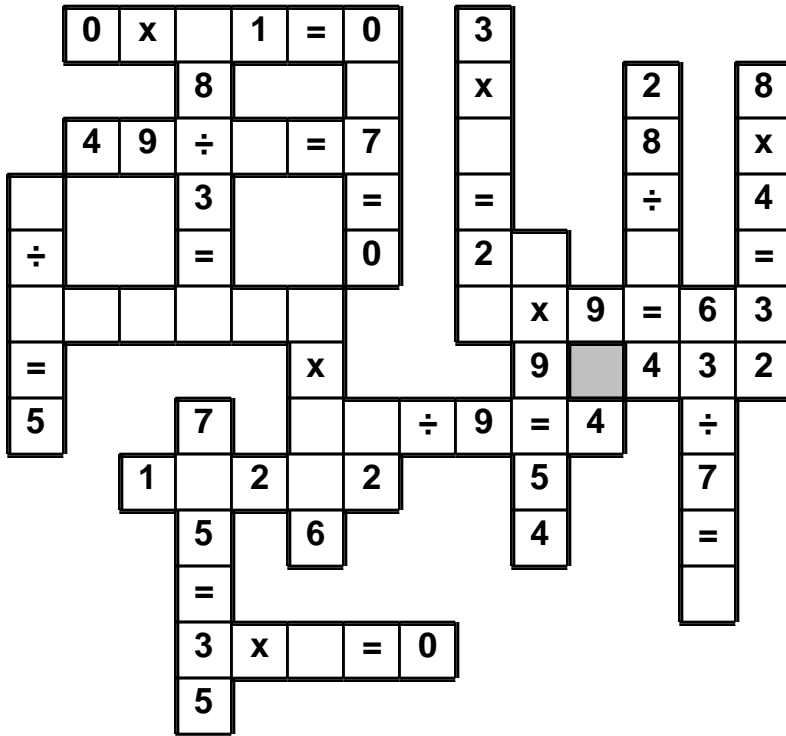
$377 - 187 = \underline{\hspace{2cm}}$

$3 \times 2 = \underline{\hspace{2cm}}$

Name: \_\_\_\_\_

1 • x • 7 • 9 • 5 • 6 • 7 • 1 • 2 • ÷ • 6 • = • 2 • 7 • 3 • 6  
x • = • 9 • 0

Use the pieces above to help you fill in the runaway math puzzle.



Write this as a number in standard form.  
Use a comma in your number.

eight hundred eighty thousand three  
hundred thirty-one

\_\_\_\_\_

What time is 13 hours after  
4:00 a.m.?

\_\_\_\_\_

Amanda is giving out candy, but you need  
to guess her favorite number if you want  
some. Her favorite number has three digits.  
The hundreds digit is 2 more than the units  
digit.  
The three digits add up to twenty-two.  
The units digit is 1 more than the tens digit.  
One digit in her number is seven.

Are you going to get candy?

$12 \times 6 =$  \_\_\_\_\_

Write an equation to represent this:

The sum of seven and six is thirteen.

\_\_\_\_\_

$6 \times 12 =$  \_\_\_\_\_



Name: \_\_\_\_\_

The Netherlands, Austria, and Italy were awarded gold (7, 3, and 2), silver (7, 6, and 2), and bronze (6, 7, and 8) medals. Figure out how many of each type of medals were won by each of the three countries.

For example, country x may have won 7 gold, 2 silver, and 7 bronze medals. However, if country x won 7 gold medals, that means country z did not win 7 gold medals. Instead, country z may have won 3 gold medals.

Use the clues to figure out the number of medals awarded to each country.

1. One country won seven silver medals. The same country also won seven gold medals.
2. Austria won either two or three gold medals.
3. the Netherlands won either three or seven gold medals.
4. Austria won the fewest bronze medals.
5. One country won an even number of bronze medals and two silver medals.
6. Austria won a total of sixteen medals.
7. Austria won fewer bronze medals than silver medals. Austria also won more bronze medals than gold medals.
8. Austria won three silver medals in speed skating as well as two silver medals in ski jumping.
9. the Netherlands won the most bronze medals.
10. Italy won either two or six silver medals.
11. the Netherlands won a total of seventeen medals.
12. Italy won more silver medals than gold medals. Italy also won fewer silver medals than bronze medals.

the Netherlands won \_\_\_\_\_ gold medal(s), \_\_\_\_\_ silver medal(s), and \_\_\_\_\_ bronze medal(s).

Austria won \_\_\_\_\_ gold medal(s), \_\_\_\_\_ silver medal(s), and \_\_\_\_\_ bronze medal(s).

Italy won \_\_\_\_\_ gold medal(s), \_\_\_\_\_ silver medal(s), and \_\_\_\_\_ bronze medal(s).

Name: \_\_\_\_\_

Multiply mentally.

$0.3 \times 0.8$

$0.2 \times 7$

$0.12 \times 0.5$

$0.4 \times 0.04$

$0.5 \times 6$

$0.6 \times 0.17$

$7 \div 0.7$

$8 \div 0.5$

$18 \div 0.9$

$2 \div 0.1$

$52 \div 0.8$

$0.2 \div 0.5$

$0.56 \div 0.8$

$0.4 \div 0.8$

$96.66 \div 0.18$

$65.65 \div 0.13$

Name: \_\_\_\_\_

1 is written with an I.

5 is written with a V.

10 is written with an X.

50 is written with an L.

100 is written with a C.

You cannot have 4 of the same letter consecutively.

4 is written as IV.

9 is written as IX.

40 is written as XL.

So you cannot write 44 like this: XXXXIIII.

But you would write 44 like this: XLIV.

Write the number as a Roman numeral and then find the Roman numeral.

## Roman Numerals

I = \_\_\_\_\_

IV = \_\_\_\_\_

V = \_\_\_\_\_

IX = \_\_\_\_\_

XII = \_\_\_\_\_

XIV = \_\_\_\_\_

XVII = \_\_\_\_\_

XIX = \_\_\_\_\_

XLIII = \_\_\_\_\_

1 \_\_\_\_\_  
XIXXXVIIIV  
IXIIXLIIIXII

3 III  
XIIIXXXIVII  
IIIXXIVXLVI

2 \_\_\_\_\_  
IIXXLIXXXIX  
IIIXIIXXLIV

6 \_\_\_\_\_  
VXXXIIIVIX  
VVIVVIIIII

9 \_\_\_\_\_  
VIVIXXIVV  
IXIIIVIIIXVI

7 \_\_\_\_\_  
VIIIXIXXIV  
VVIIIXIIIIIX

10 X  
XXLVIIIXIXL  
XIIXXXXVXI

13 \_\_\_\_\_  
XXIIIIIVIIIV  
XVXIIIXXVX

44 \_\_\_\_\_  
XXXLIVXLIIL  
XLIVXXXXXVI

20 \_\_\_\_\_  
XLVIIIXXVIII  
XXXXXLVIXII

49 \_\_\_\_\_  
XXXIIIXLIXV  
XXLIXXXXVII

45 \_\_\_\_\_  
VIIIXLVIIIX  
XLVIIIXIIII

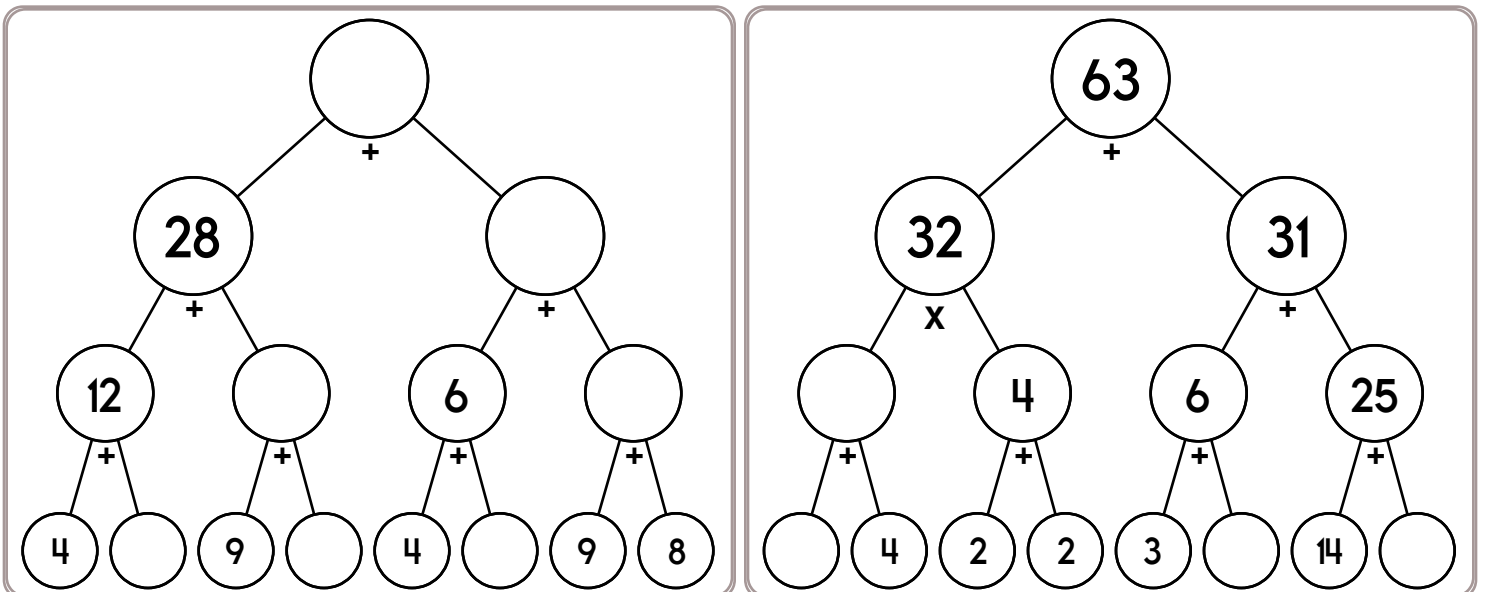
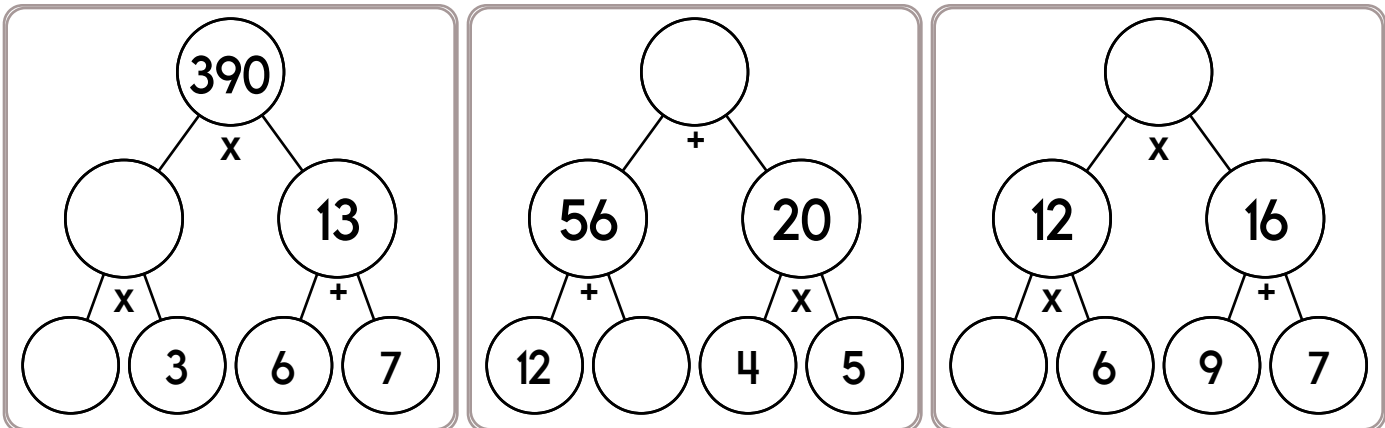
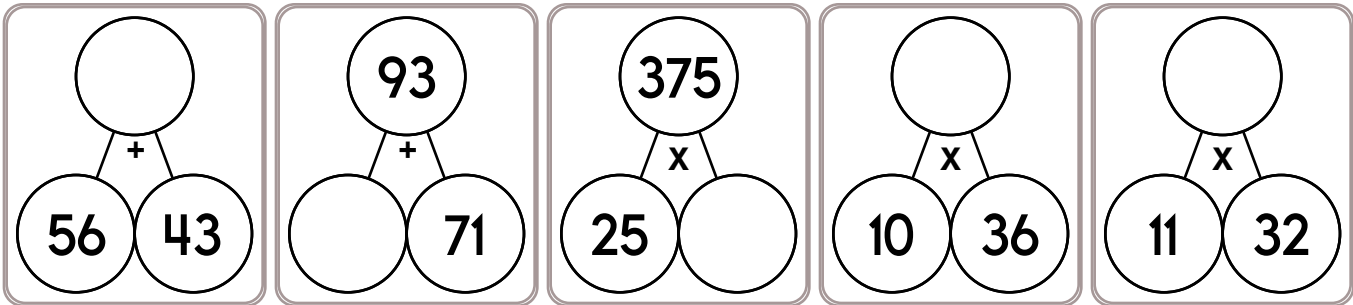
30 \_\_\_\_\_  
VXXXVIXXXI  
XXXXVIIIXIII

36 \_\_\_\_\_  
XXIXXXVIVI  
XXXVXXXVIL

18 \_\_\_\_\_  
IXXVIIIXXIX  
XVIIIXLIIII

57 \_\_\_\_\_  
XXVIIILVIIIX  
VIIILVIIIVIII

Name: \_\_\_\_\_



$$0.5 (0.6 (0.5 + 4)) =$$

$$(4 + 12) + 6 = 2(v + 8)$$

What is the value of v?

The letter V has an unknown value. If you multiply V by twelve, the product is four. What value does V have?

Name: \_\_\_\_\_

Use ALL of these digits, including the decimal point. Cross off a digit after you use it.

.                                      7                                      6                                      5

Write a number that is closest to 70.

$\frac{1}{4}$

$\frac{1}{6}$

$\frac{3}{4}$

$\frac{1}{3}$

$\frac{2}{3}$

$\frac{2}{5}$

$\frac{1}{2}$

Name two of the above numbers that have a difference of  $\frac{1}{15}$ .

Use any of these digits. Cross off a digit after you use it. You do not need to use all of the numbers.

0

4

5

3

5

The product of a 2-digit number and a 1-digit number is 135. Write the equation.

Name: \_\_\_\_\_

$$\frac{39}{50} = \frac{78}{100} = \underline{\hspace{1cm}} \%$$

$$\frac{3}{20} = \frac{\hspace{1cm}}{100} = \underline{\hspace{1cm}} \%$$

$$\frac{17}{25} = \frac{\hspace{1cm}}{100} = \underline{\hspace{1cm}} \%$$

$$\frac{16}{25} = \frac{\hspace{1cm}}{100} = \underline{\hspace{1cm}} \%$$

$$\frac{1}{10} = \frac{\hspace{1cm}}{100} = \underline{\hspace{1cm}} \%$$

$$\frac{28}{100} = \frac{7}{25} = \underline{\hspace{1cm}} \%$$

$$\frac{40}{100} = \frac{\hspace{1cm}}{5} = \underline{\hspace{1cm}} \%$$

$$\frac{70}{100} = \frac{\hspace{1cm}}{10} = \underline{\hspace{1cm}} \%$$

$$\frac{72}{100} = \frac{\hspace{1cm}}{25} = \underline{\hspace{1cm}} \%$$

$$\frac{85}{100} = \frac{\hspace{1cm}}{20} = \underline{\hspace{1cm}} \%$$

$$\frac{13}{25} = \frac{\hspace{1cm}}{100}$$

$$\frac{13}{20} = \frac{\hspace{1cm}}{100}$$

$$\frac{1}{4} = \frac{\hspace{1cm}}{100}$$

Mary put posters on the wall in her room. The posters cover  $\frac{3}{4}$  of the wall. What percent of the wall is covered with posters?

Name: \_\_\_\_\_

The number 384 expressed as a product of its prime factors is  $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3$ . Using this, try to quickly figure out how to express the number 1,536 as a product of its prime factors.

Write the greatest common factor for each pair of numbers.

22 and 44

36 and 63

16 and 44

Find the square of each number.

2

8

15

Find the cube of each number.

5

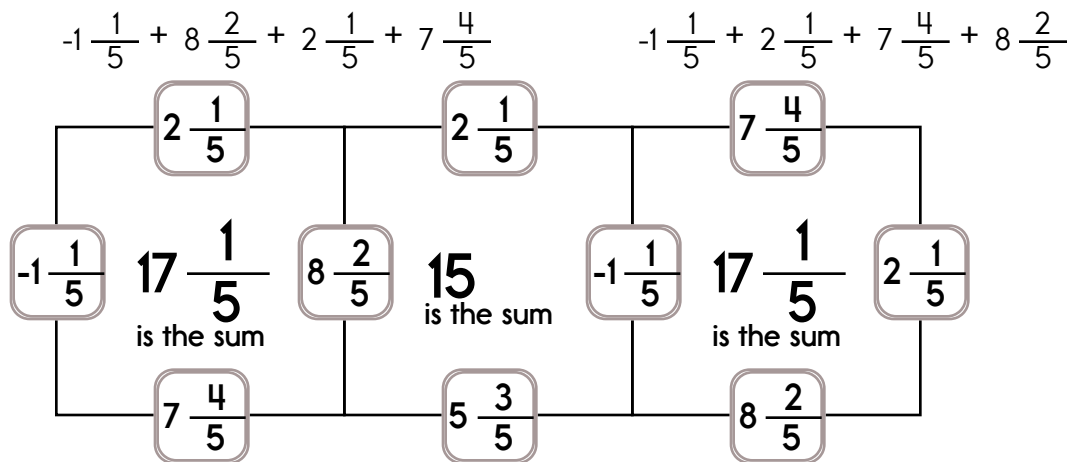
11

If you are given that  $19^2 = 361$ , then show how you would find the square of 190.

Name: \_\_\_\_\_

This puzzle has a large number in the middle, which is the sum of the four numbers that surround it.

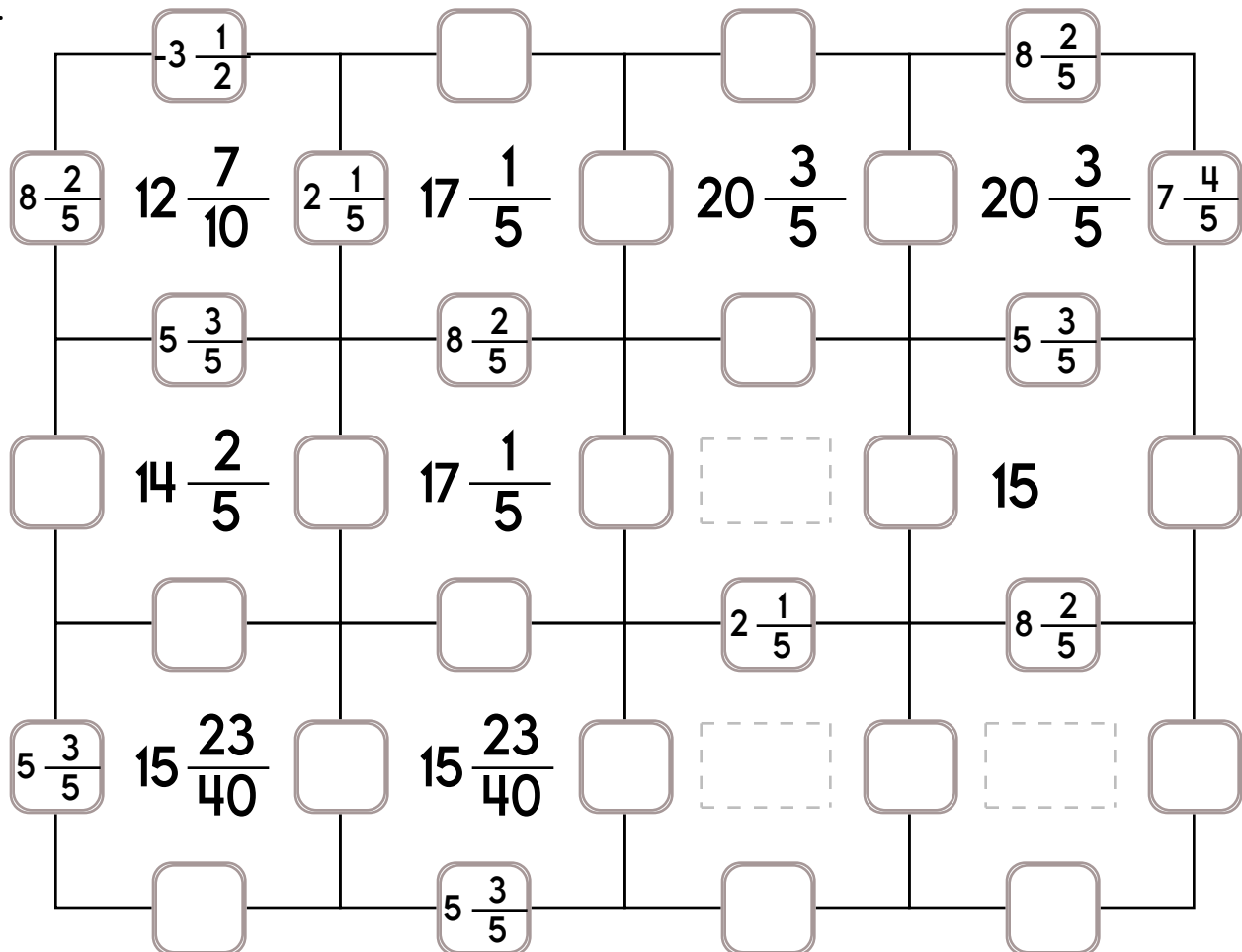
Sample:



Fill in the missing numbers. How? The sum of the four surrounding numbers is in the center of each square.

Exactly one of the four numbers has to be one of these numbers:  $-1\frac{1}{5}$ ,  $-3\frac{1}{2}$ , or  $-\frac{5}{8}$ .

The other three numbers have to all be DIFFERENT and must be from these:  $5\frac{3}{5}$ ,  $8\frac{2}{5}$ ,  $7\frac{4}{5}$ , or  $2\frac{1}{5}$ .





Exactly one of the four numbers has to be one of these numbers:  $-\frac{2}{5}$ ,  $-2\frac{1}{2}$ , or  $-3\frac{5}{6}$ .

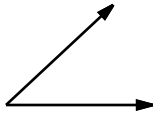
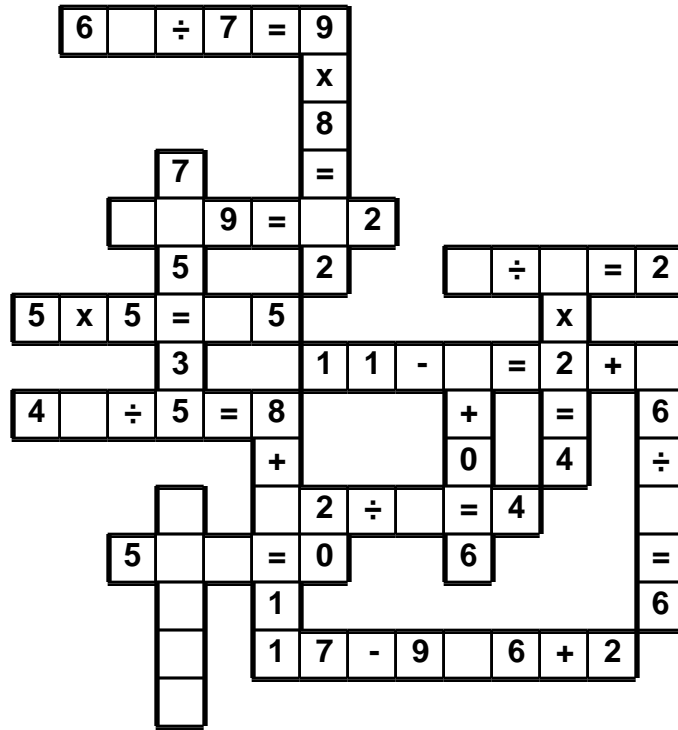
The other three numbers have to all be DIFFERENT and must be from these:  $6\frac{1}{5}$ ,  $7\frac{4}{5}$ ,  $3\frac{3}{5}$ , or  $1\frac{2}{5}$ .

	$1\frac{2}{5}$			$3\frac{3}{5}$		$3\frac{3}{5}$	
$6\frac{1}{5}$	$12\frac{9}{10}$	$-2\frac{1}{2}$	$8\frac{7}{10}$		$8\frac{7}{10}$		$10\frac{3}{10}$
	$7\frac{4}{5}$			$1\frac{2}{5}$			
	$15\frac{1}{10}$		$7\frac{11}{30}$		$8\frac{29}{30}$		$8\frac{29}{30}$
	$17\frac{1}{5}$		$11\frac{17}{30}$		$12\frac{9}{10}$		
	$12\frac{2}{5}$		$11\frac{17}{30}$		$13\frac{23}{30}$		$11\frac{17}{30}$
	$10\frac{3}{10}$		$12\frac{9}{10}$				

Name: \_\_\_\_\_

3 • 8 • x • 7 • 4 • 2 • 2 • 6 • 3 • 0 • 0 • 3 • 8 • 6 • x • 0  
7 • = • = • 0

Use the pieces above to help you fill in the runaway math puzzle.



What kind of angle is this?

Sketch 2 lines  $\overleftrightarrow{KL}$  and  $\overleftrightarrow{XY}$  that are intersecting.

C, J, E, K, G, L, I, M,  
\_\_\_\_\_, N

Circle the least amount:

36%

0.31

$\frac{8}{25}$

$\frac{7}{12} \div \frac{5}{6} =$

Name: \_\_\_\_\_

Fill in the missing numbers.

Only rule - The same number CAN NOT be next to each other, in ANY direction.

Dark lines surround a block. Numbers to use in a block:

A block with 1 space has to be the number 1.

A block with 2 spaces must have the numbers 1 and 2.

A block with 3 spaces must have the numbers 1, 2, and 3.

A block with 4 spaces must have the numbers 1, 2, 3, and 4.

5	2	4	3	1		2	1
1	3	1				5	3
2	4	5	3	4		4	1
3	1	2	1	2	5	2	3

An entire block with 5 spaces is blank. Since the block is 5 spaces it uses the numbers 1-5.

3 5 1 2 4

3	2	4	1			3	2
4	5	3	5			4	1
1	2	1	2		1	2	5

An entire block with 5 spaces is blank. Since the block is 5 spaces it uses the numbers 1-5.

1 5 2 3 4

	4	1	3	1	3	2
2	5		5		4	
	3	4	3	1	5	

Hint - These numbers are missing:

2 4 2 1 2 1

1		2		1	5	1
4			5	2	3	2
1	2	4	3	1	4	

Hint - These numbers are missing:

5 1 3 1 3

Name: \_\_\_\_\_

### Sudoku Sums of 13

Each row, column, and box must have the numbers 1 through 9.  
Hint: Look for sudoku sums. The sum of the two boxes inside of the dashed lines is 13.

Here is an example of a sudoku sum of 13:

5	8
---	---

		7		4			5	9
9	6	8				4		
	5	4		7		2	6	
	7	9		2	8	3		
			7			9		
		6						
	8	2				7	4	
		1	3			5	9	2
7		5						

4 x 12 = _____	2 x 3 = _____	9,837 - 8,314 = _____
----------------	---------------	-----------------------

Name: \_\_\_\_\_

Words can be to the RIGHT, DOWN, LEFT, or UP. Every letter is used ONCE.

S B Q N E T R A G R E D N I K  
E E U T C H A I R S T U M P  
E A A H M S I N O R H C A N A  
B S R I B E G D E B S I H T T  
L P R E N P N D I G I R F U  
U E E V W O I S O R E L O B P  
F C L E O T S L O N E S O M E  
F T S S D I M P O S S I B L E

Write the words found.

IMPOSSIBLE	LONESOME	

Circle the smallest number:

6,127,058,934

74,651

8,930

18,650,274,393

Anna took three numbers greater than 1 and multiplied them. One number was three and the other number was sixteen. Of course, she forgot the last number, but she remembered the product was 192. Is this possible?

$88 \div 8 =$  \_\_\_\_\_

$100 \div 10 =$  \_\_\_\_\_

$6 \div 2 =$  \_\_\_\_\_

$3 \times 11 =$  \_\_\_\_\_

Can 737 be evenly divided by 11? Circle:

737 is evenly divisible by 11

737 is NOT evenly divisible by 11



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$\times$   $=$   $-$   $\div$   $<$   $-$   $>$

More puzzles!



