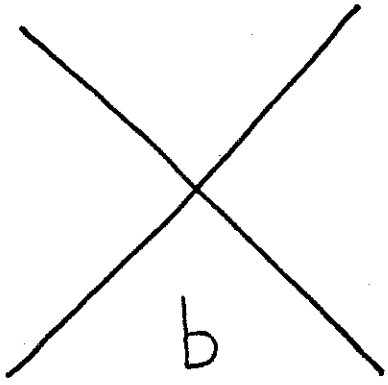
INCREDIBLY HARD Problems



Name _____

Circle the letter for your answers.

1. Don bought a bag of 20 new marbles.
He now has 75 marbles.
We want to know how many marbles Don had before he bought the new ones?

Mark a number sentence that cannot be used to solve this problem?

a) 20 + 75 = ☐ b) 75 = 20 + ☐ ☐ + 20 = 75 d) ☐ = 75 - 20

2. A jar holds 1/2 as much as a pitcher.
If the jar holds 8 pints, then how much does the pitcher hold?

a) 16 pints b) 12 pints c) 4 pints d) 2 pints

3. The boy scouts reserved 4 rows with 7 seats in each row.
Only 18 scouts came to the game.

How many seats in the scout section were not filled?

a) 46 b) 28 c) 10 d) 8

4. Jill took tickets at the movies.
Adult tickets were $1.00 and children's tickets were 50¢.
40 adults and 60 children bought tickets.

How much money did they collect?

a) $100 b) $70 c) $60 d) $50

5. Ellen bought 12 pepper plants at a sale price of 3 plants for 40¢.
They usually cost 25¢ each.

How much did she pay for the plants?

a) $4.80 b) $3.00 $1.60 d) $1.20

6. Altogether Mary and Sally have 36 candies.
Mary has 3 times as many as Sally has.

How many candies does Sally have?

a) 6 b) 9 c) 12 d) 27 e) can't tell

7. One day Terry found some marbles.
The next day he found twice as many marbles.
The third day he found one more.
That gave him 16 altogether.

How many did he find the first day? _____

In these problems, letters stand for numbers.

Samples: $a + 7 = 12$, so $a =$ 5

$3 \times b = 33$ so $b =$ 11

$(4 \times c) + 1 = 41$, so $c =$ 10

You do the rest:

$d + 13 = 14$, so $d =$ _____

$e - 4 = 5$, so $e =$ _____

$6 \times f = 12$, so $f =$ _____

$g \div 4 = 8$, so $g =$ _____

$(7 \times h) + 1 = 15$, so $h =$ _____

$(3 \times i) - 6 = 15$, so $i =$ _____

$(j \times j) + 1 = 26$, so $j =$ _____

$k + 2 + k + 1 = 11$, so $k =$ _____

$(3 \times m) \times 2 = 18$, so $m =$ _____

$(n + 1) \div 3 = 6$, so $n =$ _____

$p + p + q = 7$, so what could p be and q be? $p =$ _____ and $q =$ _____

(Do as many as you can)

or $p =$ _____ and $q =$ _____

or $p =$ _____ and $q =$ _____

Rules

Spin 2 spinners.

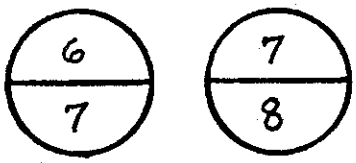
Add together the numbers the 2 spinners point to.

You win if they add to 15 or more.

Play the game 100 times.

If you played with these spinners:

How many times do you think you would win out of 100?

1. 

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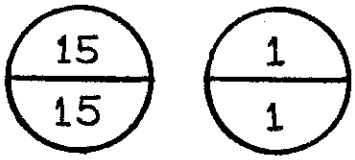
2. 

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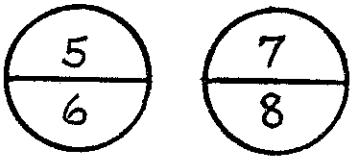
3. 

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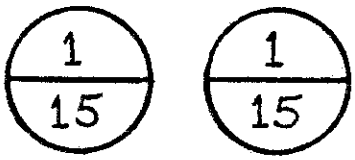
4. 

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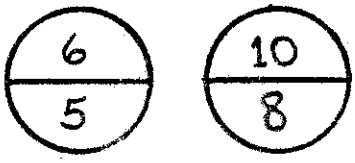
5. 

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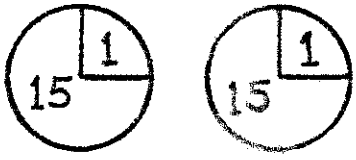
6. 

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Rules

Spin 2 spinners.

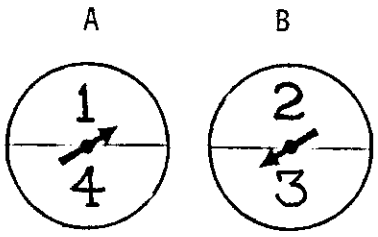
You win if Spinner A points to a larger number than Spinner B.

Play the game 100 times.

If you played with these 2 spinners:

How many times do you think you would win out of 100?

1.



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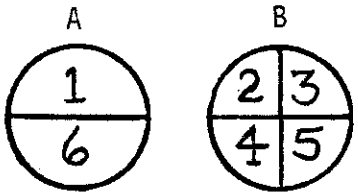

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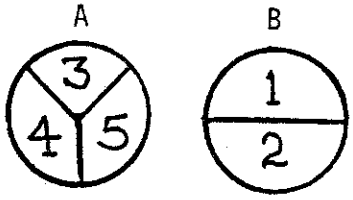

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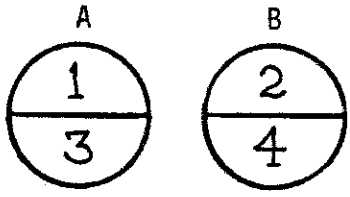

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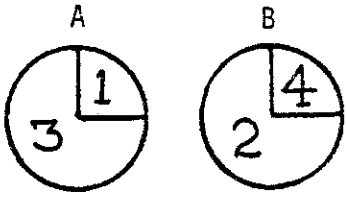

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Samples

a) Ties cost $5 each.
Bob bought 3 ties.
How much did he spend on ties?

- ☐ Need to know more_____
- ☑ Exactly the right amount of information
- ☐ Too much information (cross out the extra information)

b) A box is 10 inches long.
It is 8 inches wide.
What is the volume of the box?

- ☑ Need to know more *How high the box is*
- ☐ Exactly the right amount of information
- ☐ Too much information (cross out the extra information)

c) Tom bought 12 apples at 10¢ each.
~~He also bought 4 candy bars~~.
How much did he spend on apples?

- ☐ Need to know more_____
- ☐ Exactly the right amount of information
- ☑ Too much information (cross out the extra information)

1. There are 96 boys in the school.
There are 89 girls in the school.
How many buses will be needed for the school picnic?

☐ Need to know more_____

☐ Exactly the right amount of information

☐ Too much information (cross out the extra information)

2. A car goes 55 miles per hour.
It goes 15 miles for each gallon of gasoline.
How long will it take the car to go 165 miles?

☐ Need to know more_____

☐ Exactly the right amount of information

☐ Too much information (cross out the extra information)

3. Pat and Leslie have 30 books altogether.
Pat has 8 more books than Leslie has.
How many books does Pat have?

☐ Need to know more_____

☐ Exactly the right amount of information

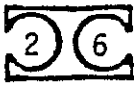
☐ Too much information (cross out the extra information)

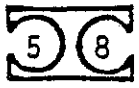
4. A man needed 9 fence posts on each side of his square garden.
The fence posts were 6 feet apart.
How many fence posts did he use?

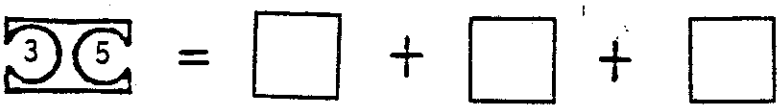
☐ Need to know more_____

☐ Exactly the right amount of information

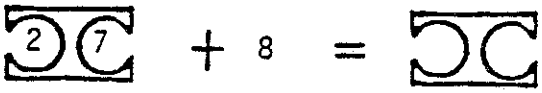
☐ Too much information (cross out the extra information)

Facts  is a short way of writing $2 + 3 + 4 + 5 + 6$

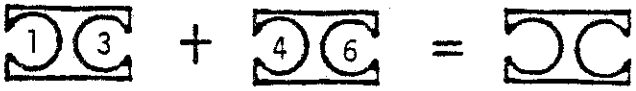
So $5 + 6 + 7 + 8$ can be written 

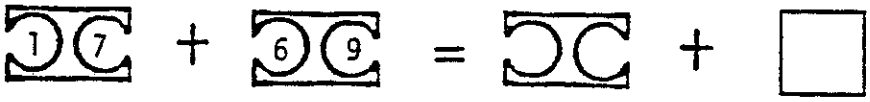
Samples 

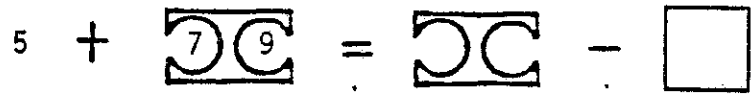
$6 + 7 + 8 + 9 =$ 

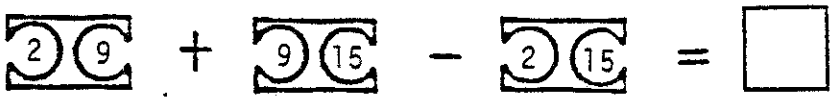


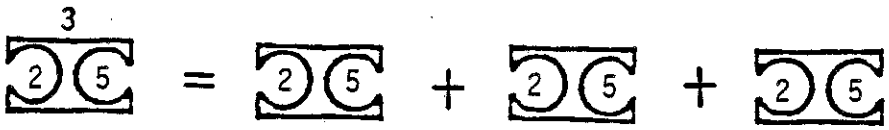
You do the rest: 

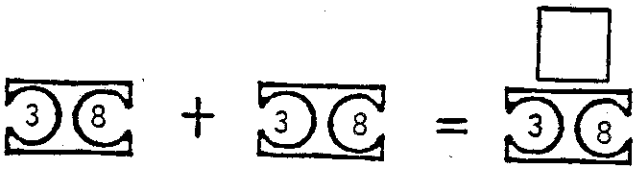








Fact 

Sample 

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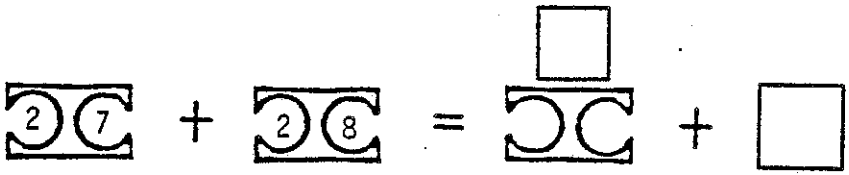

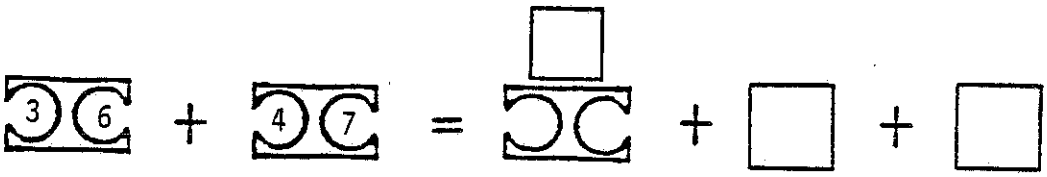

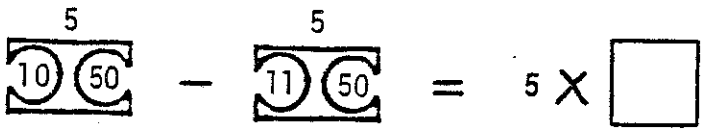

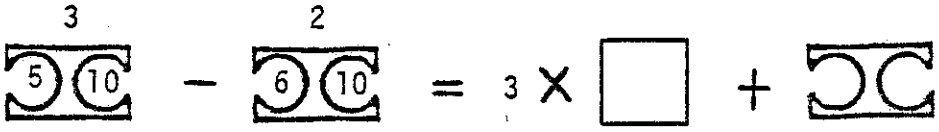

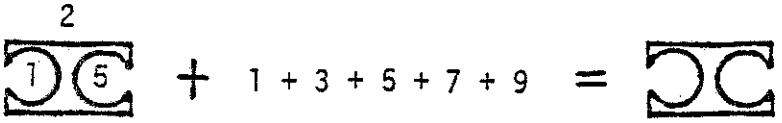

$500 \div 2 = \square$

$360 \div 90 = \square$

$800 \div \square = 200$

$\square \div 3 = 30$

$1200 \div 4 = \square$

$3{,}600 \div 15 = 240$

$3{,}615 \div 15 = \square$

$1{,}200 \div 30 = 40$

$1{,}200 \div 15 = \square$

$(36 \times 25) \div 12 = \square$

$36{,}036 \div 36 = \square$

Circle all the numbers that are equal to the one in the box.
There is usually more than one. The first one is done for you.

Sample	$\boxed{\frac{1}{2}}$	(0.5)	$\frac{2}{1}$	1.2	($\frac{2}{4}$)	(0.500)	($\frac{25}{50}$)
	$\boxed{\frac{4}{5}}$	0.45	$\frac{16}{20}$	0.8	$\frac{80}{100}$	8.0	$\frac{5}{4}$
	$\boxed{\frac{1}{4}}$	0.40	$\frac{25}{100}$	0.025	$\frac{10}{14}$	0.25	$\frac{5}{20}$
	$\boxed{0.75}$	0.750	$\frac{75}{100}$	0.075	$\frac{15}{20}$	$\frac{1.3}{1.4}$	$\frac{3}{4}$

Give one fractional answer and one decimal answer for each problem. The first one is done for you. There are many correct answers.

	Fractional Answer	Decimal Answer
Sample: A number that is larger than $\frac{1}{4}$ but smaller than $\frac{3}{4}$	$\frac{1}{2}$	0.6
A number that is larger than 0.4 but smaller than 0.9		
A number that is larger than $\frac{1}{3}$ but smaller than $\frac{7}{8}$		
A number that is larger than 0.20 but smaller than $\frac{3}{4}$		
A number that is larger than 0.8 but smaller than 1.0		
A number that is larger than $\frac{1}{4}$ but smaller than $\frac{1}{3}$		
A number that is larger than 0.6 but smaller than $\frac{2}{3}$		
A number that is larger than $\frac{7}{8}$ but smaller than 1.0		

These are the 4 boys: Bill Tom Ed Pete

These are the 4 leagues: indoor soccer outdoor soccer indoor hockey outdoor hockey

These are the facts: Each boy plays in a different league.
Bill plays indoors.
Tom doesn't play hockey.
Ed doesn't play outdoors and he doesn't play soccer.

What league does each boy play in? (Circle your anwers)

Bill:	indoor soccer	outdoor soccer	indoor hockey	outdoor hockey
Tom:	indoor soccer	outdoor soccer	indoor hockey	outdoor hockey
Ed:	indoor soccer	outdoor soccer	indoor hockey	outdoor hockey
Pete:	indoor soccer	outdoor soccer	indoor hockey	outdoor hockey

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There are 3 sports: soccer, hockey and basketball.

For each sport there are 2 leagues: an indoor league and an outdoor league.

How many leagues are there? _____

These are the facts: The boys are called A, B, C, and so on.
Each boy plays on a different league.
A and C play basketball.
B and D don't play soccer.
A, B, and E play indoors.

Which league does each boy play in?

A _____

B _____

C _____

D _____

E _____

F _____

There are 4 girls: Ann Bonny Carla Doris

There are 4 days: Monday Tuesday Wednesday Thursday

There are 4 sports: Bicycling Swimming Volleyball Horseback Riding

These are the facts: Each girl takes one lesson a week in her sport.

Each girl plays a different sport.

Bonny takes lessons on Tuesday and doesn't take swimming.

Ann takes volleyball and doesn't take lessons on Monday.

Doris takes lessons on Wednesday and doesn't take bicycling or swimming.

Who took what sport on what day? (Circle your answer)

	Day				Sport			
Ann:	Mon	Tue	Wed	Thur	Bicycle	Swimming	Volleyball	Horseback riding
Bonny:	Mon	Tue	Wed	Thur	Bicycle	Swimming	Volleyball	Horseback riding
Carla:	Mon	Tue	Wed	Thur	Bicycle	Swimming	Volleyball	Horseback riding
Doris:	Mon	Tue	Wed	Thur	Bicycle	Swimming	Volleyball	Horseback riding

In Mr. Smith's class:

18 students play baseball.

13 students play basketball.

21 students play football.

No students play all three sports.

No students play both baseball and basketball.

7 students play both football and baseball.

17 students play football but not basketball.

How many students play baseball only? _____

How many students play football only? _____

How many students play basketball only? _____