**Gridlines Geometry**

The aim of the game is to find solutions to situations shown on **Problem** **Cards**, using numbers made from **Number** **Cards**. There are many possible solutions to each card. You must find numbers that can fit **all** the variables in the given situation.

**Playing the Game Summary (also see the notes section below).**

1. Take the 3 ‘I Give Up’ cards to use later.
2. Shuffle Number and Problem Card packs and place them separately face down.
3. Place top 10 Number Cards in 2 rows of 5 face up and 3 problem cards face up.
4. Solve Problem Cards using the Number Cards on the table. (Look at the *Example Solution* at the bottom of this page).
5. Take, keep and replace correctly solved Problem Cards. Return and replace used Number Cards.
6. Play an ‘I Give Up’ card at any time to replace any or all of the number and/or Problem Cards.
7. Keep solving until the agreed time is up. Score 1 for each solved card.

**The Problem Cards**

Notes to clarify details in the diagram

**The Number Cards**

Number Cards can be organised into groups or played individually. Put the cards on top of one another to make a new number. When placed on the table, ONLY the required number can be visible.

Examples

Use: To Make Or Or



90

5

90

5

5

90

90

5

100

2

5

2

100

2

100

5

100

2

5

Difficulty level (1, 2 or 3 with 3 the hardest)

Problem Category M=mensuration (Area), A=Angles, P=Pythagoras

Variables to be found and the order to show them in

Diagram showing the situation

**Example Solution**

I choose a=10 and b=4 because I can make 4 and 10 from the number cards.

* The area of the triangle AFD is $\frac{1}{2}×4×10=20$
* The area of the square ABCD is $10^{2}=100$
* So, the area of BCDF is $100-20=80$

If I can make 80 from the number cards, then I can show my solution.

(If not, choose different values for a and b and try again).

I show A, a, b using the number cards for 80, 10, 4

You must use separate number cards for all the numbers.

A judge or opposing team should check that the solution is correct.



**Notes**

1. In competitive play, you must explain, step-by-step to the judge how your variables fit the situation. You can show important calculations you have made in your notebook if this helps.
2. When you play one ‘I give up!’ card you can swap as many cards as you like. Even all of the problem **and** number cards or some number and some problem cards. Replace the cards taken to return to ten number cards and three problem cards face up on the table. Now resume play.
3. Experienced players may wish to count the total number of points from the cards solved. (These are shown in the blue circle on each card as 1, 2 or 3, where 3 is the hardest).





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