

# SMILE WORKCARDS

## Logic and Sets Pack Three

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KITTY SET OFF ON A SPONSORED WALKING RACE FOR CHARITY.....



THE COURSE WAS QUITE LONG. AFTER A WHILE.....



KITTY FOUND THE GOING HARD — HER PLIMSOLLS WERE NOT IDEAL FOR THE WALKING RACE.....



KITTY WAS GIVEN A LIFT TO THE FINISHING LINE, ALONG WITH THE OTHERS WHO HAD BEEN UNABLE TO MAKE IT.....



ONLY THREE PEOPLE, ALAN, BETTY AND CAROL HAD FINISHED. KITTY WENT UP TO THEM AND ASKED EACH THE RESULT. UNFORTUNATELY ONE OF THEM LIED.....



..... AFTER SOME TREATMENT TO HER PAINFUL FEET KITTY WENT TO SEE WHO HAD WON THE RACE.

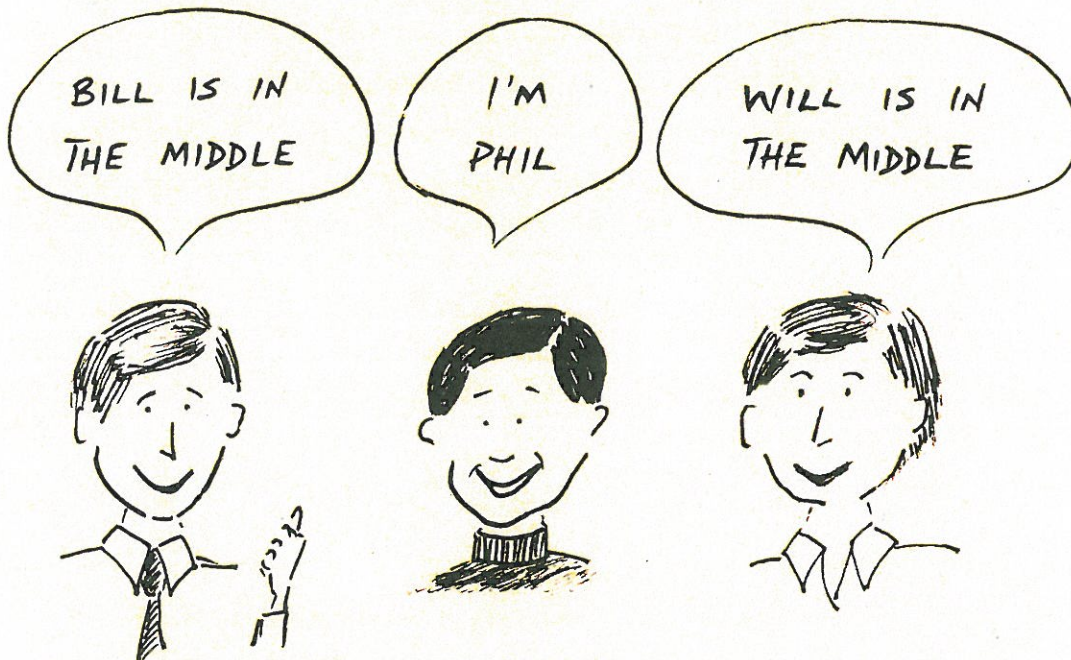
..... BUT FROM WHAT THEY SAID, KITTY WAS ABLE TO WORK OUT THE RESULT — CAN YOU?



0727

SMILE

## WHO'S WHO?



Bill ALWAYS tells the truth but Phil and Will sometimes lie.

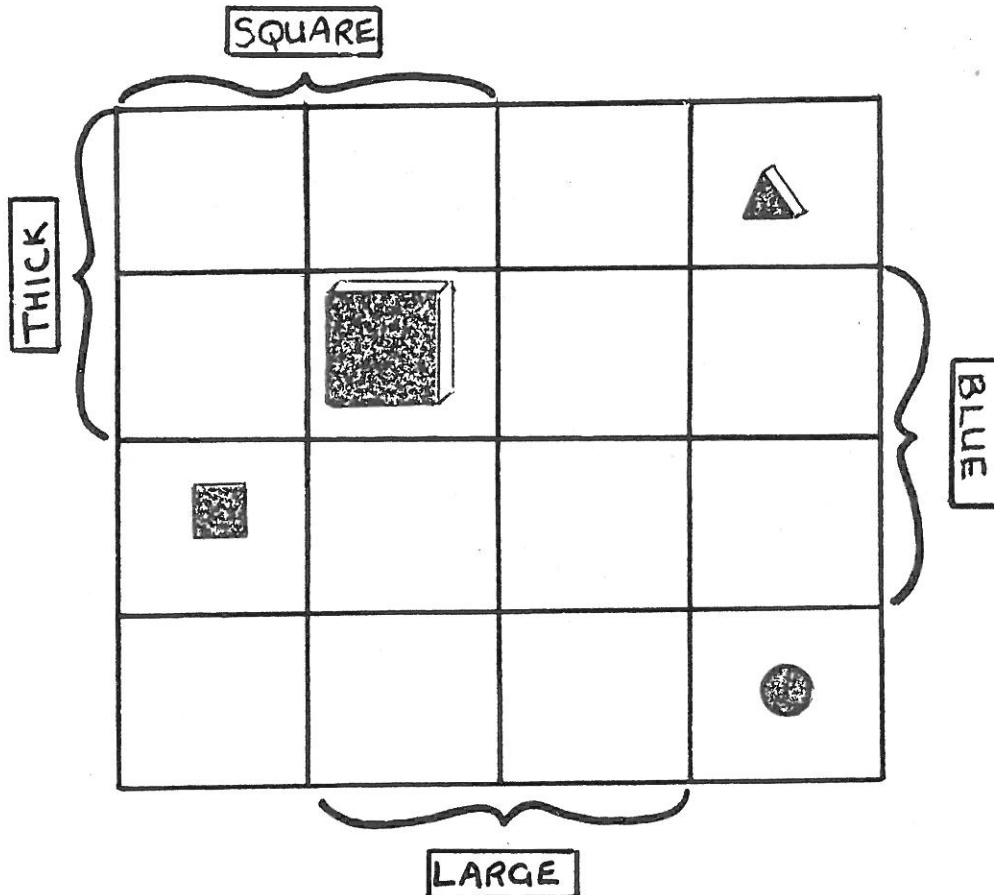
- (1) Which one is Bill?
- (2) Where are Will and Phil?

Explain all your answers.

You will need: Logiblocs,  
Karnaugh map for 4 sets, cards 0579A

### Karnaugh Maps for 4

A game for 2 or more players



Label your Karnaugh Map with 4 attributes from cards 0579A.  
The above game has used THICK, SQUARE, LARGE, BLUE.

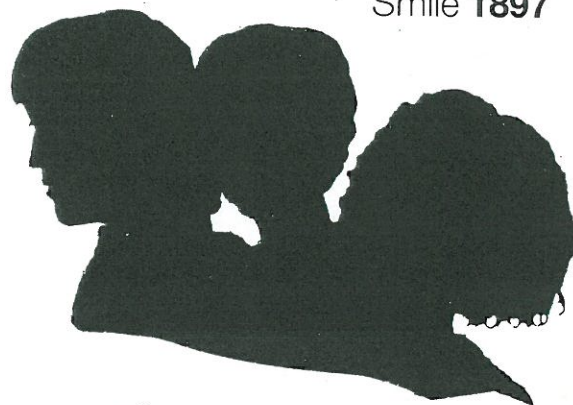
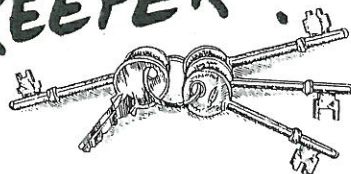
#### To play

- (1) Share out the logiblocs.
- (2) Each player in turn must correctly place a logibloc.
- (3) A move may be challenged.  
If the player is wrong he removes his piece and loses that turn.  
If the challenger is wrong he misses his next turn.
- (4) The player who uses all his pieces first is the winner.

Play the game several times using different attributes  
each time.



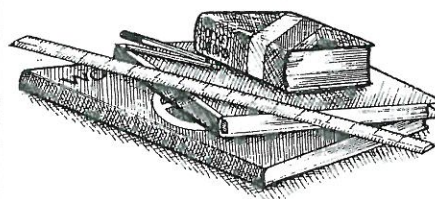
# WHO IS THE SCHOOLKEEPER?



**1** THREE PEOPLE LIVE IN THESE THREE FLATS.



**2** THE STUDENT LIVES NEXT DOOR TO MEE FING.



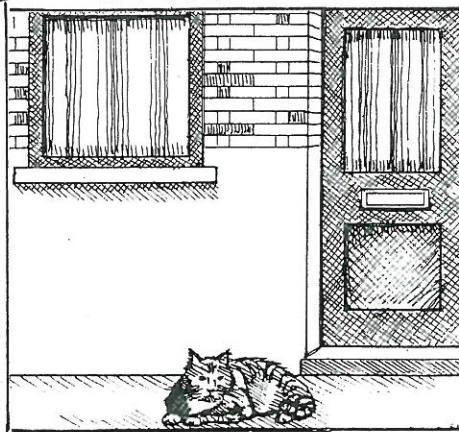
**3** FLAT 53 HAS A YELLOW DOOR.



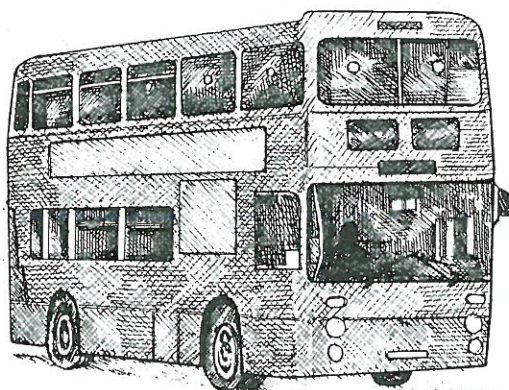
**4** DONNA LIVES NEXT TO THE FLAT WITH THE RED DOOR.



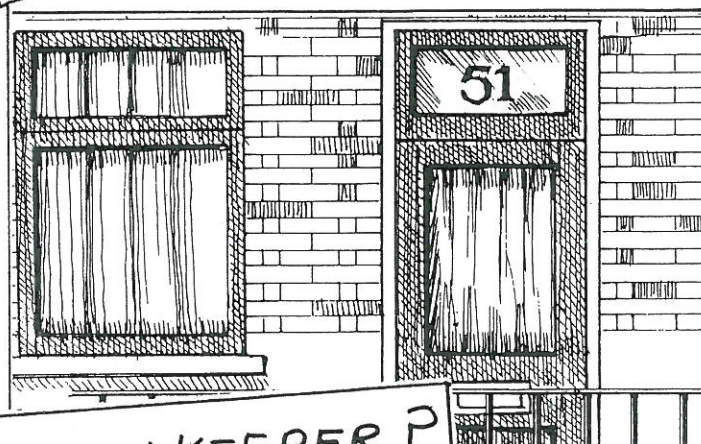
**5** MEE FING LIVES NEXT DOOR TO NIRMALA.



**6** THE BUS DRIVER LIVES IN THE FLAT WITH THE GREEN DOOR.



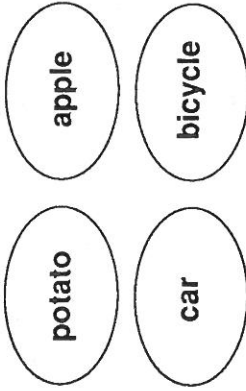
**7** NIRMALA LIVES IN FLAT 51.



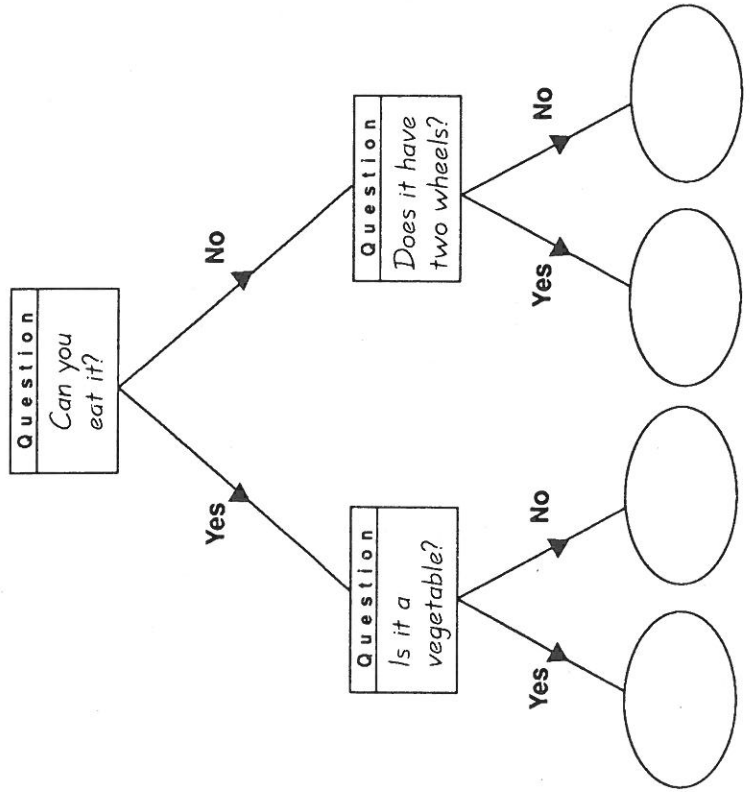
WHO IS THE SCHOOLKEEPER?

# What's the difference?

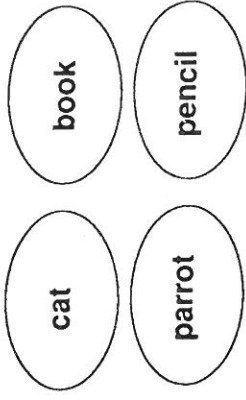
1. Here are 4 objects:



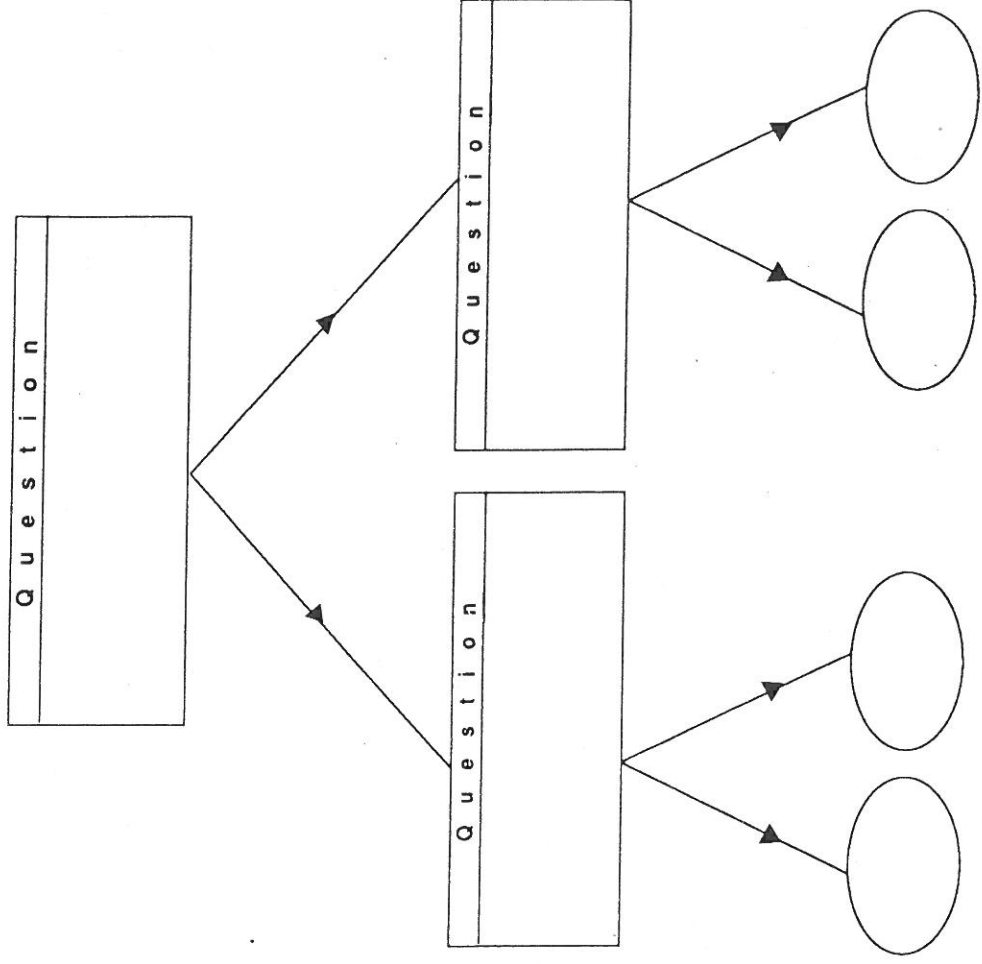
Complete the decision tree diagram below, by filling in the names of the objects.



2. Make your own decision tree diagram using these objects.

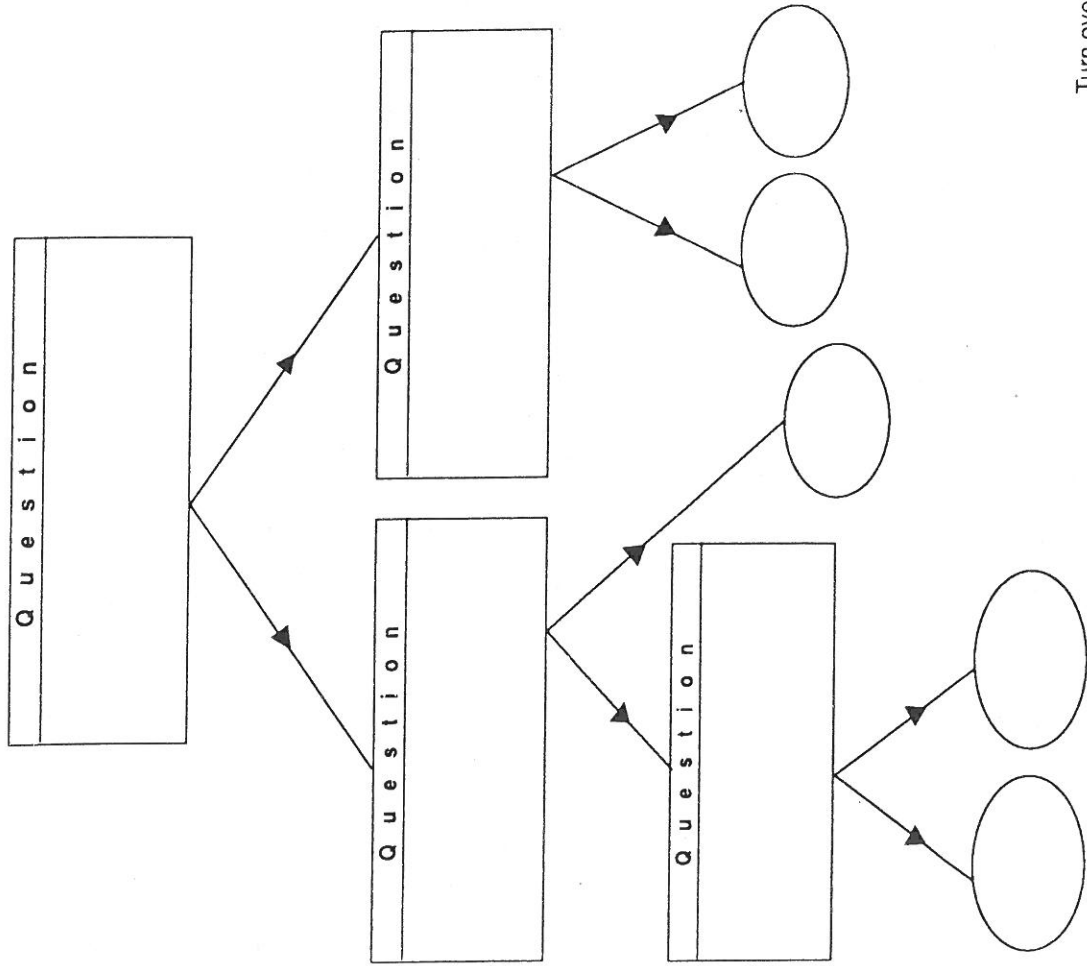
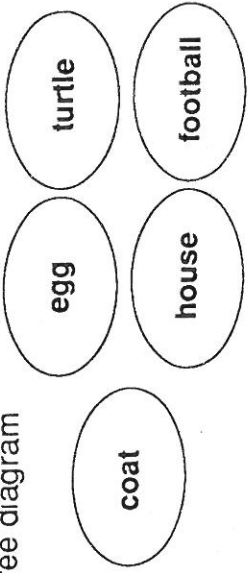


Think up your own questions.



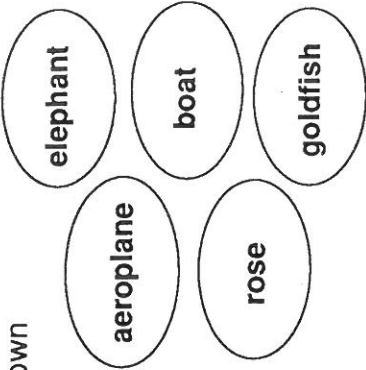


3. Complete this decision tree diagram for 5 objects.



Turn over

4. Make a decision tree diagram of your own for these 5 objects.



## A HUNGRY DEATH ?



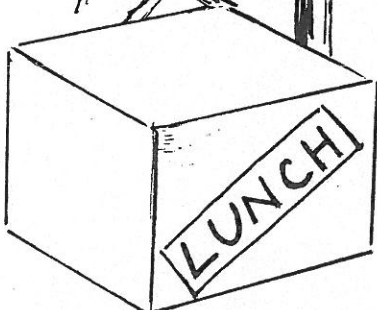
I LEFT 3 BOXES IN MY OFFICE,  
ONE WITH A BOMB INSIDE,  
ONE WITH MY LUNCH IN IT,  
AND ONE WITH MY SECRET FILE.



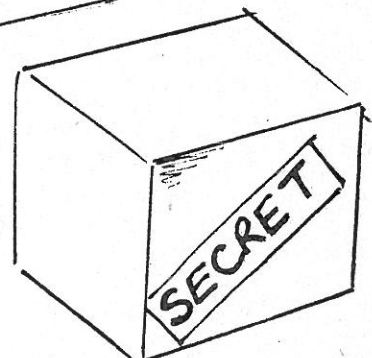
A SPY BROKE IN WHILE I WAS OUT  
AND CHANGED THE LABELS SO THAT  
EVERY LABEL IS NOW ON THE WRONG  
BOX.

IF I OPEN THE BOX WITH THE BOMB  
INSIDE, I WILL BE  
BLOWN UP !

BOOM !



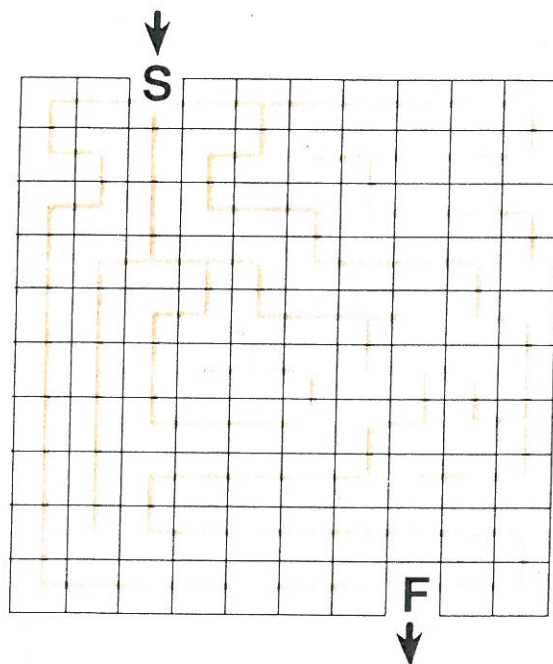
HOW CAN I EAT  
MY SANDWICHES  
SAFELY ?





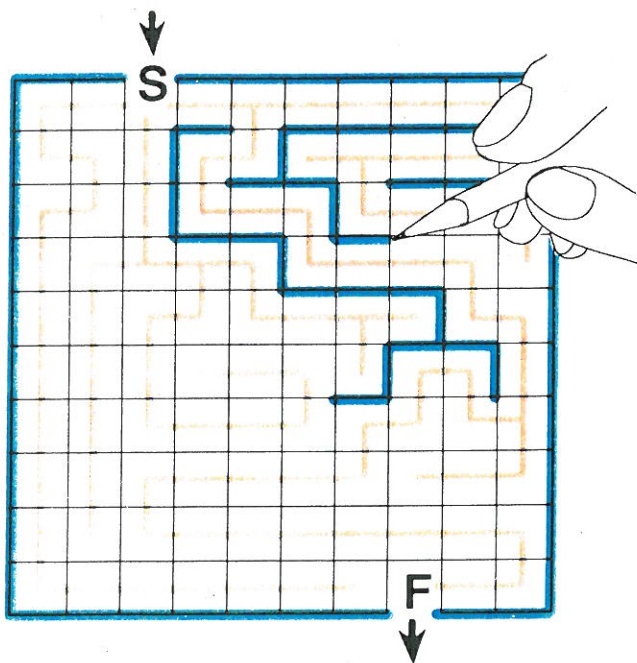
- Using a coloured pen, draw a complicated path from **S** to **F** through the middle of the squares.

- dead ends
- paths that lead back to the start.



3. Using a different colour, draw in the walls.

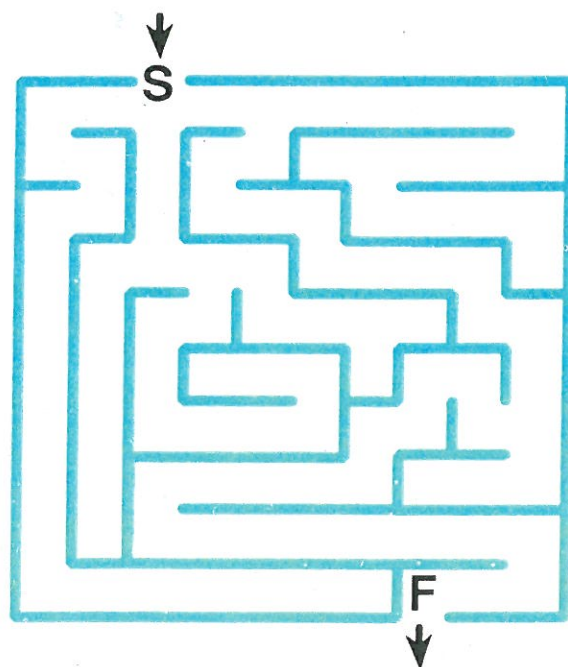
All the grid lines that do not have a path across them become the walls of the maze.



Turn over

4. Take a new sheet of squared paper or a sheet of tracing paper and draw only the walls and **S** and **F**.

Now test the maze on a friend. You will need tracing paper to stop your maze being spoilt.



5. Can you make a harder maze?



# THE LEWIS FAMILY

LAURIE IS 5 YEARS  
YOUNGER THAN CLARA.

PETER IS NOT OLD ENOUGH  
TO GO TO SCHOOL. HE IS 10  
YEARS YOUNGER THAN  
LAURIE.

MR LEWIS IS 5 YEARS  
OLDER THAN HIS WIFE.

MRS LEWIS IS TWICE  
AS OLD AS CLARA.

GRANDMA IS 25 YEARS OLDER  
THAN MR LEWIS. SHE WAS 53  
WHEN LAURIE WAS BORN.

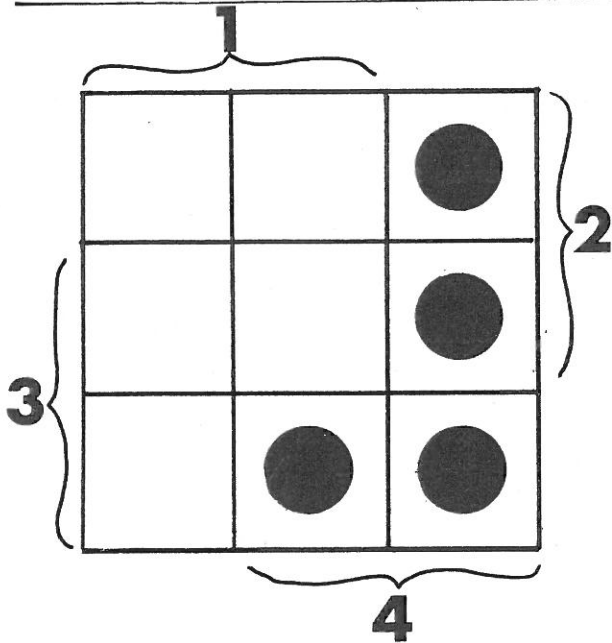
CLARA HAS LEFT  
SCHOOL AND SHE IS  
GOING TO THE USA  
WHEN SHE IS 21.

Work out the age of each person in the Lewis family.

When you think you've found the answer, check all six statements. Make sure that each statement is true for the ages you have found. Have you been caught out? If any of the statements doesn't work, you'll probably need to start again.

You will need: Counters

## Counter Placing

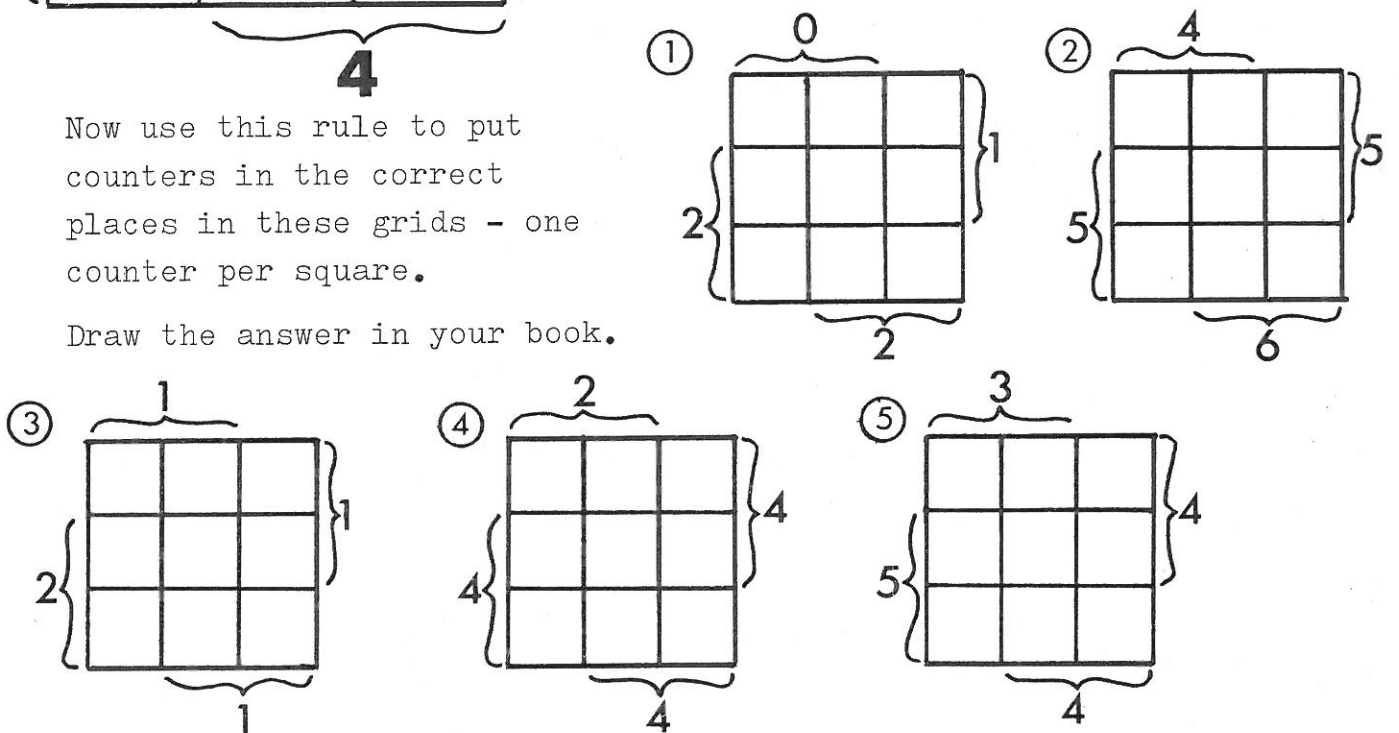


Look carefully at the counters on this grid.

Find the connection between the numbers and the counters.

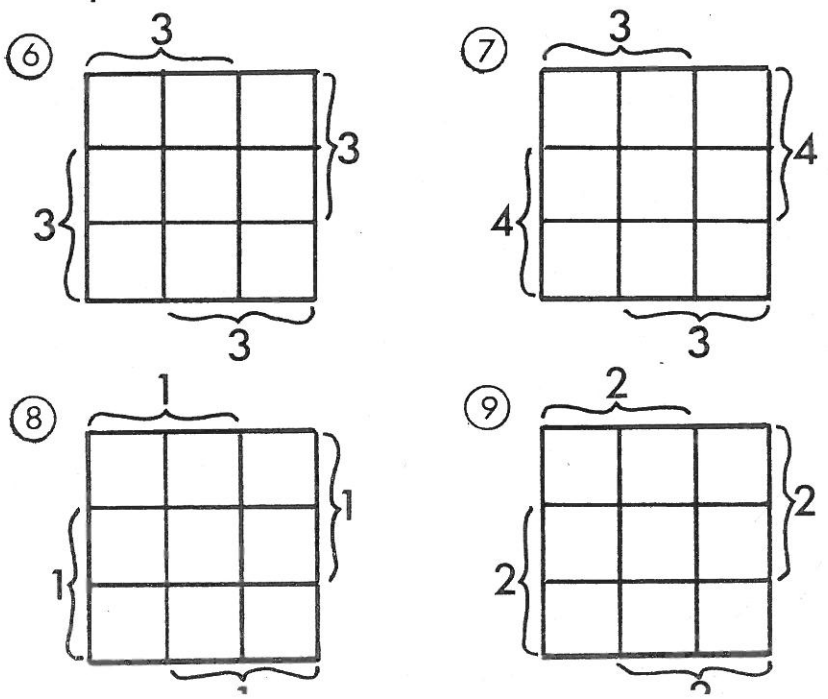
Now use this rule to put counters in the correct places in these grids - one counter per square.

Draw the answer in your book.



Find 2 different solutions for each of these grids;

How many different solutions can you find for each of these? Look for patterns in your answers to question 9





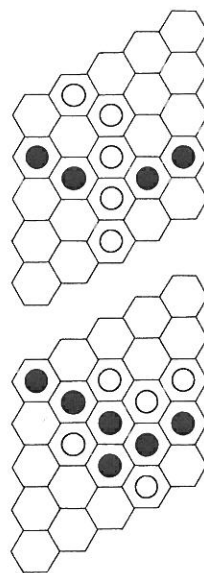
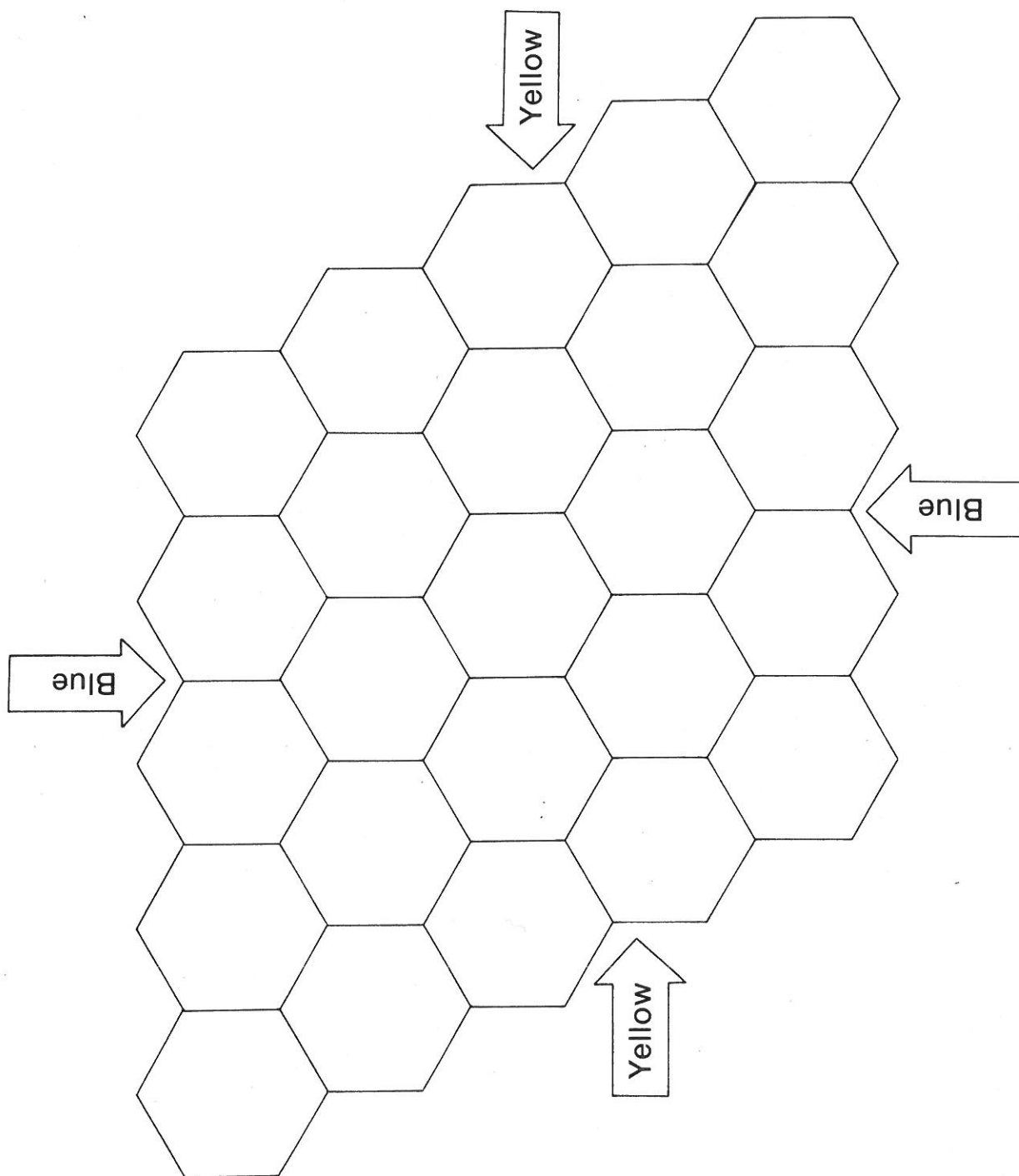
You will need blue and yellow counters.

Smile 0170

# HEX

This is a game for 2 players.

- 1) Blue must make a path from top to bottom. Yellow must make a path from side to side.
- 2) Take turns to put a counter in any empty hexagon. You need not put your first counter at the edge; you need not put your counter next to the one before.

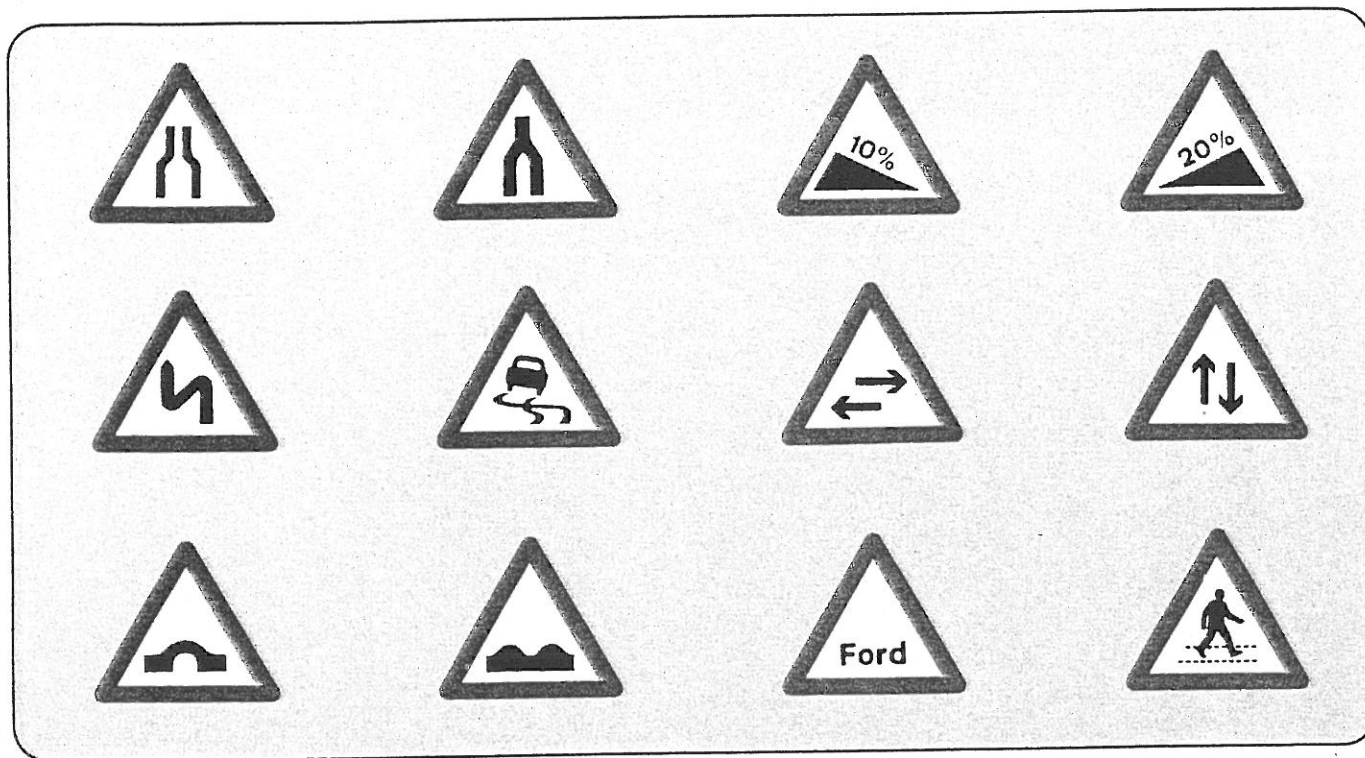


A win for blue    A win for yellow

**Should the person who goes first always win?**

# SETS OF SIGNS


You will need a copy of the Highway Code.



Turn over

1) Use the Highway Code, to find where possible, a sign for each square of the table.

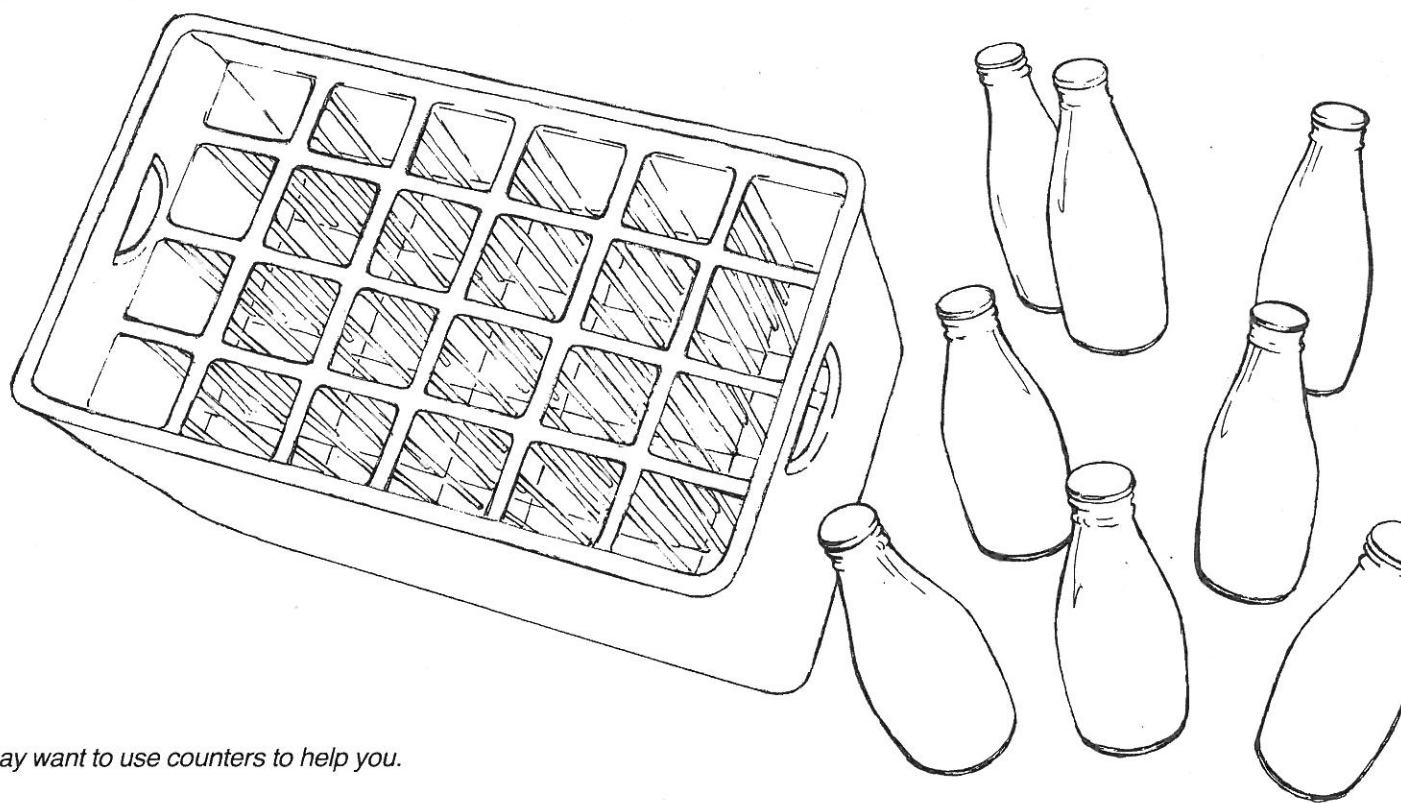
2) A red triangle usually indicates a warning. Find out what other categories mean.

	Red	Blue	Green	Black/White
Circle				
Triangle				
	Cross roads			
Rectangle				
Pentagon				



# Milk Crate

Can you arrange 18 bottles in the crate so that each row and column has an **even** number of bottles?



*You may want to use counters to help you.*

# Sort the Cards

Smile 0472

You will need: a pack of cards.

Take out

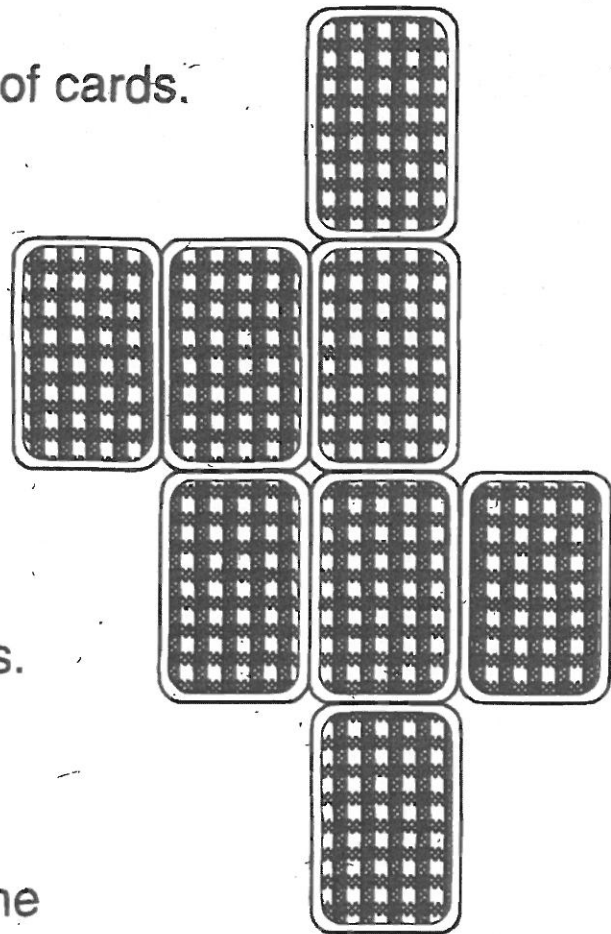
2 jacks

2 queens

2 kings and

2 aces

from the pack of cards.



Place the 8 cards in the arrangement shown following these rules;

- Each jack borders an ace.
- Each ace borders a king.
- Each king borders a queen.
- No two cards of the same kind border each other.