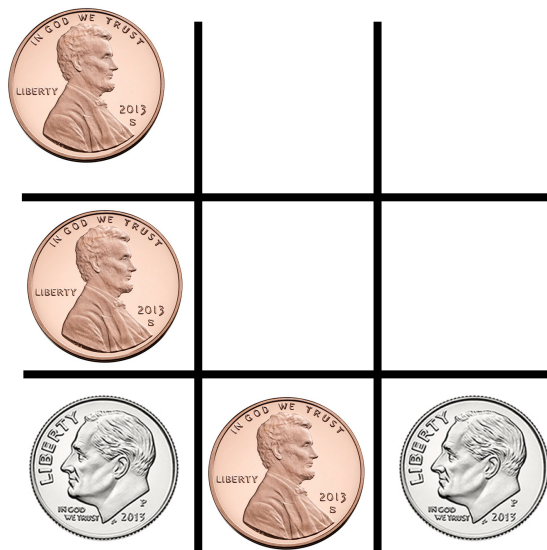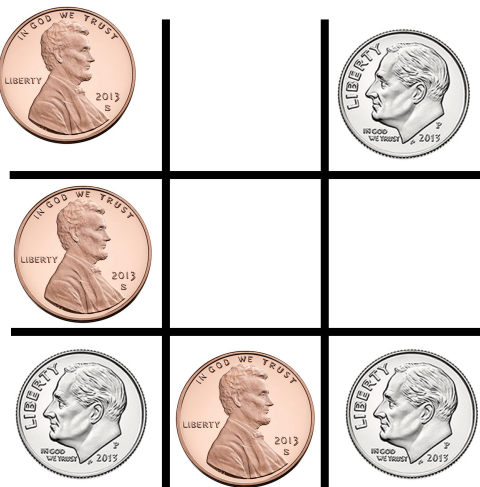# Coin Cappers

Tic Tac Toe

Two students are playing tic tac toe with nickels and dimes. The player with the nickels has just moved. It's now your turn. The challenge is to place your dime in the only square that will stop the student with the nickels from winning the game.
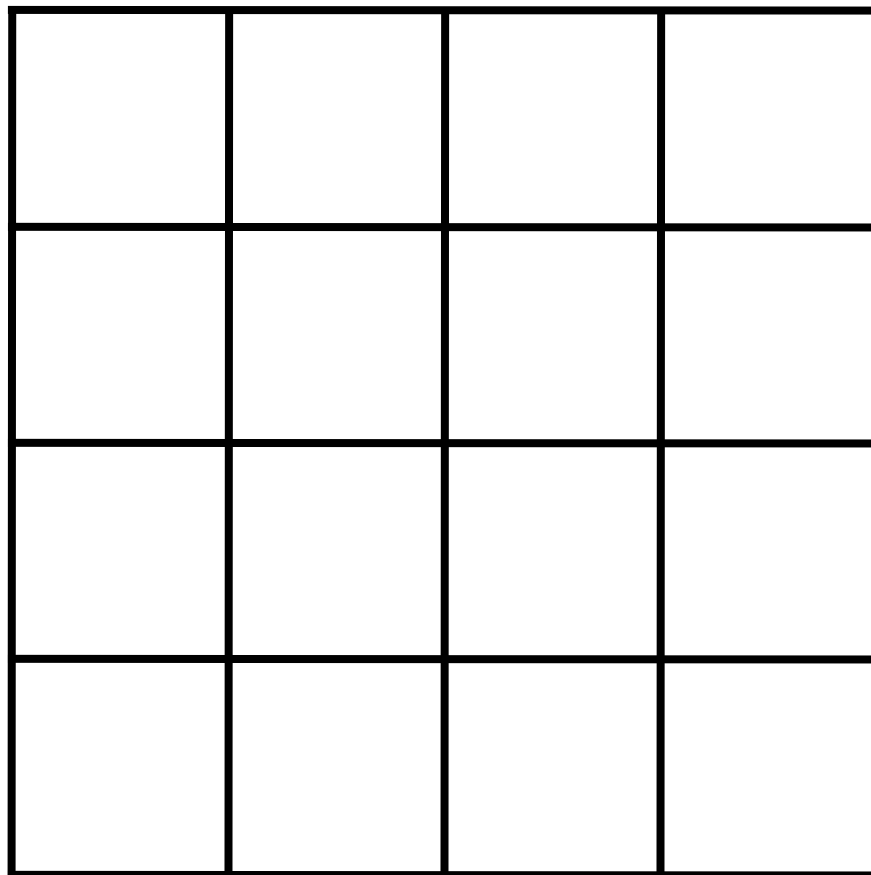
Tic Tac Toe solution

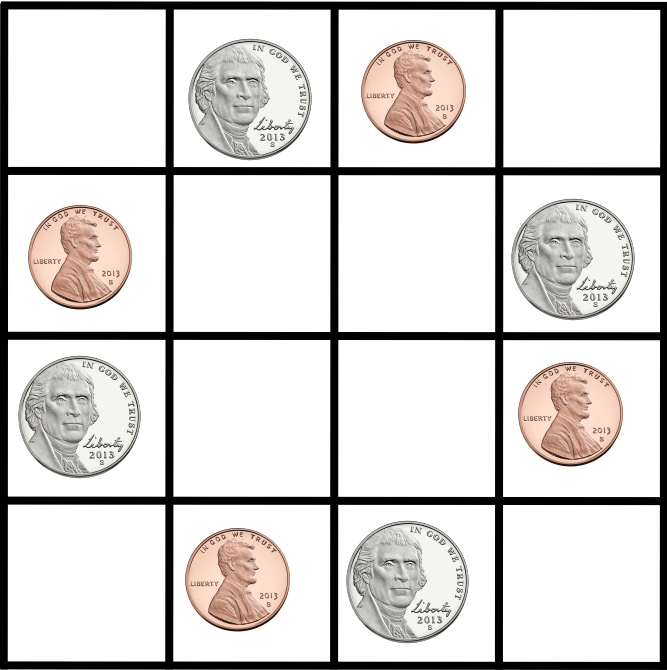Place the dime in the upper right square

No Neighbors

**Using four nickels and four dimes,
place all the coins in the 4 x 4 grid below so that
no two coins of the same denomination
are next to each other horizontally, vertically, or diagonally.**

No Neighbors solution

This is one of many possible solutions. Any rotation or reflection will also work.

Man in the Middle

Three quarters are placed in a row as shown above. The quarter with the head of George Washington is on the right end of the row. The challenge is to place the quarter with George Washington's head in between the other two quarters as shown below.

The rules for are as follows.

Your fingers can only touch the coin with the head showing.

You can slide the coin you touch but you cannot pick it up.

Man in the Middle Solution

Note: It helps to set all three quarters touching each other at the start. It also helps if you have a smooth surface to place the coins on. This will not work on a table cloth.

Pull the quarter with the head to the right and then push it hard to the left until the coin hits the coin on its left

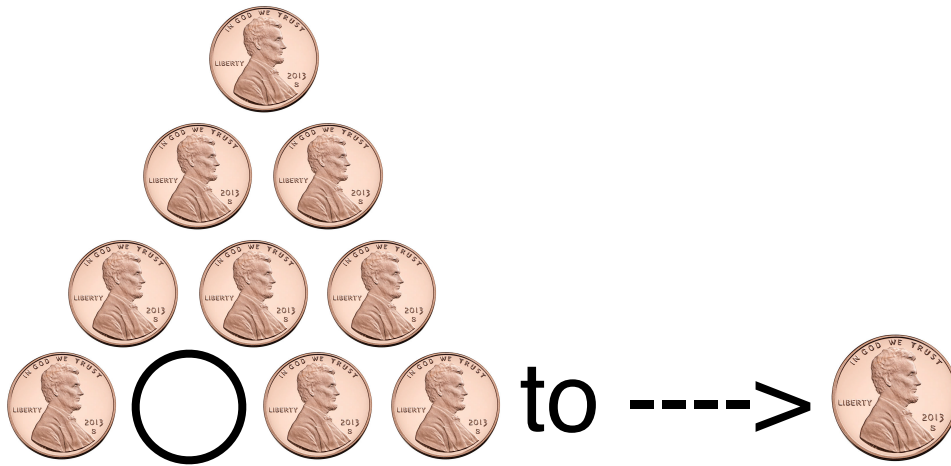This will cause the two quarters with tails showing to separate , leaving a gap as shown below. You may need to practice this until you get the correct speed to cause a gap without scattering the two coins.
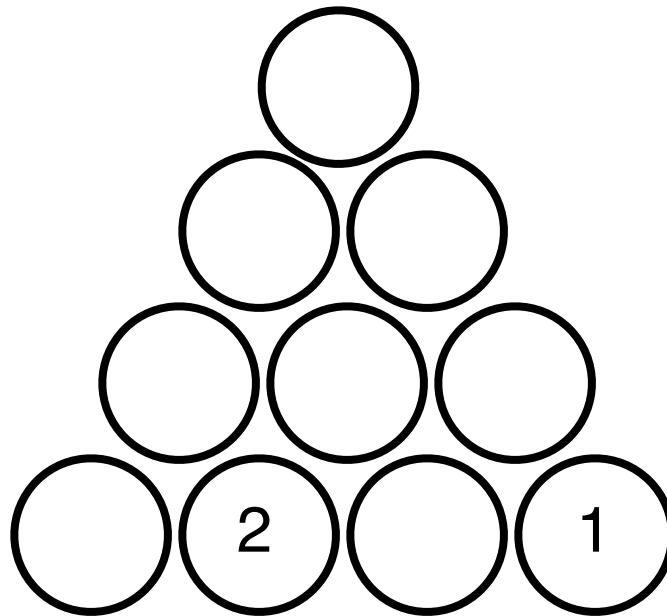

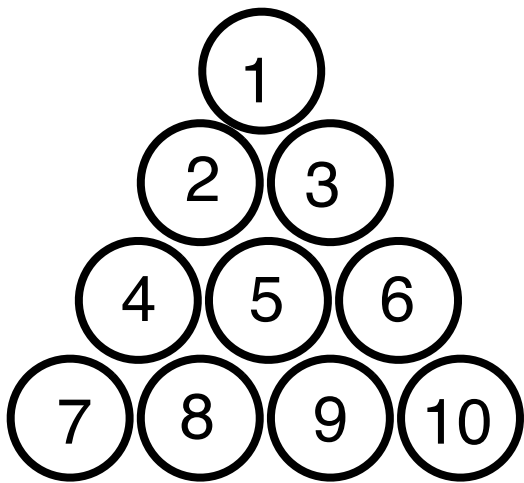Move the quarter with the head into the gap

Checker Board Challenge 1

to ---->

Place 9 pennies in the circles shown below. The challenge is to use one penny to jump over another penny into an open circle and remove the penny you jumped over. Continue doing this with any penny you like until there is only one penny remaining.   Here's the first move:. Use the penny in the number 1 spot and jump left into the open spot numbered 2. Pick up the penny that you just jumped. Good luck!
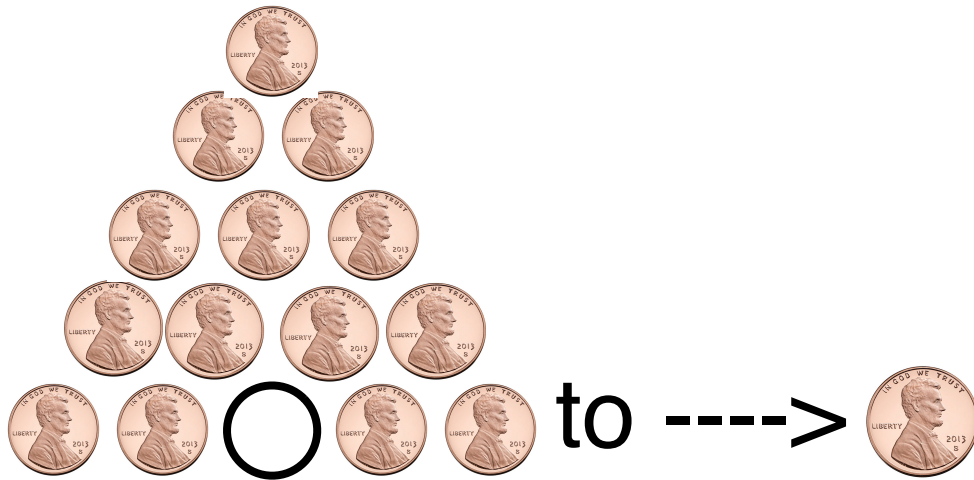
Checker Board Challenge 1 solution

Here''s one way to do this.

1. Move 10 to 8.

2. Move 3 to 10.

3. Move 7 to 9.

4. Move 10 to 8.

5. Move 2 to 9.

6. Move 9 to 7.

7. Move 7 to 2.

8. Move 1to 4.

Can you find other ways?

Checker Board Challenge 2

Place 14 pennies in the circles shown below. The challenge is to use one penny to jump over another penny into an open circle and remove the penny you jumped over. Continue doing this with any penny you like until there is only one penny remaining.   The first move. has 4 different pennies that could jump into the open spot.   Good luck!
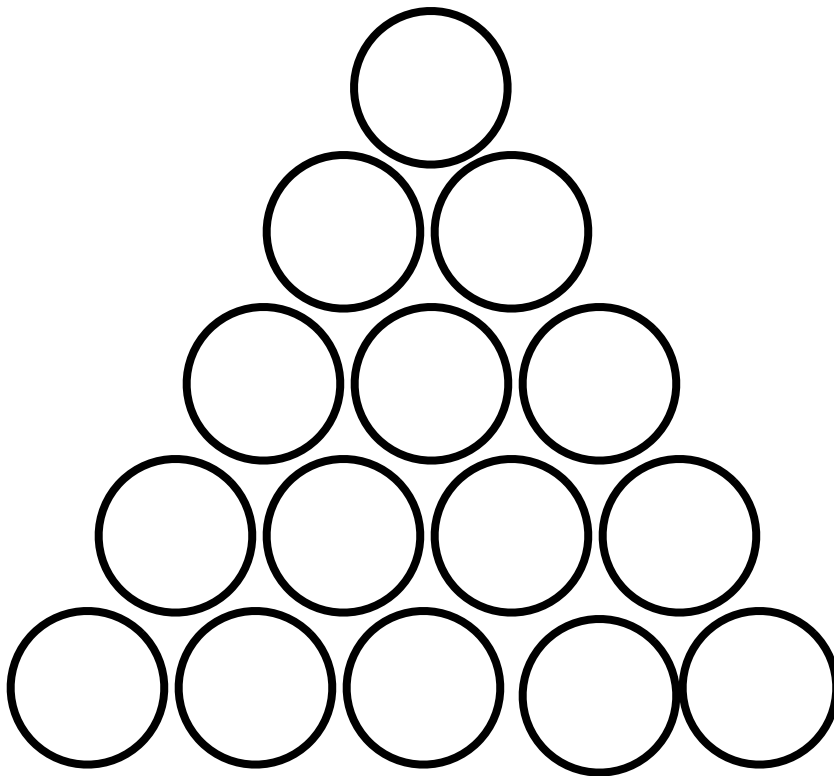
The Coin in a Cup Challenge

You have four pennies to place in three cups of the same size. You must place an odd number of coins in each cup. The challenge is to figure out how this can be done.
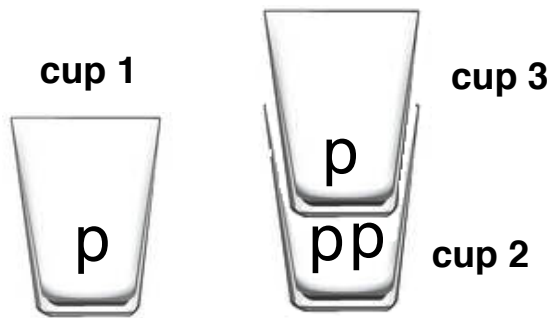
Yes It can be done.

No zero is not an odd number

You may not like the solution but you will admit it is a correct solution

The Coin in a Cup Challenge Solution

Step :   Put 1 penny cups 1 and 3 and 2 pennies into cup 2.

Step 2 :   Put cup 3 INTO cup 2.
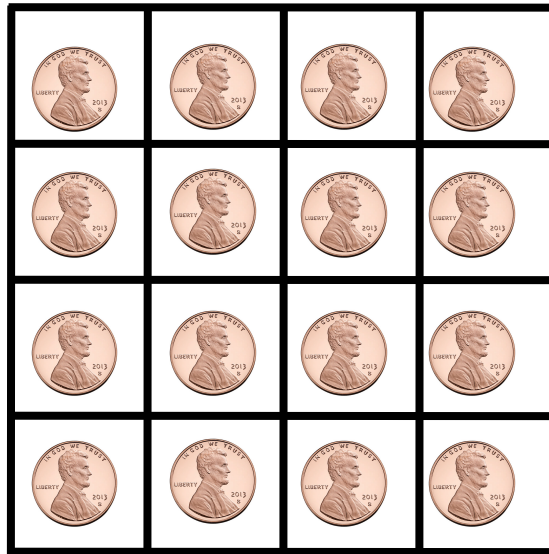
cup 1

cup 3

p

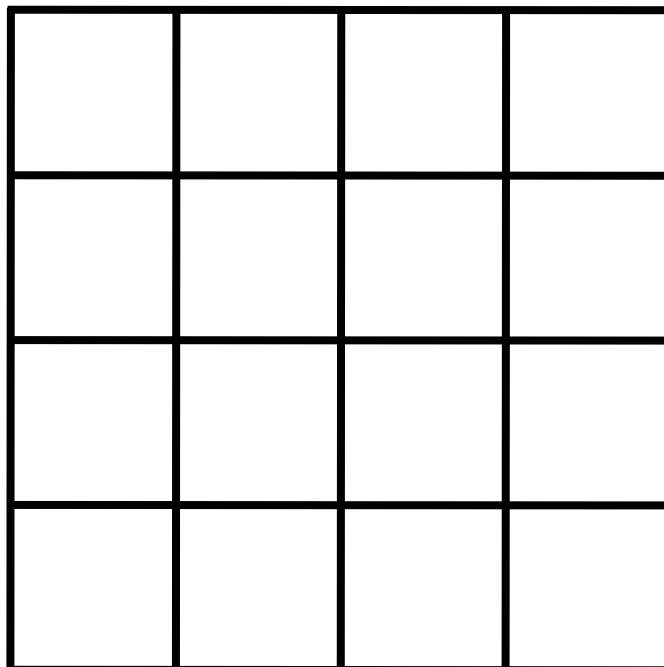p p   cup 2

Cup 1 has 1 penny in it.
Cup 3 has 1 penny in it.

Cup 2 has 3 pennies in it if you count
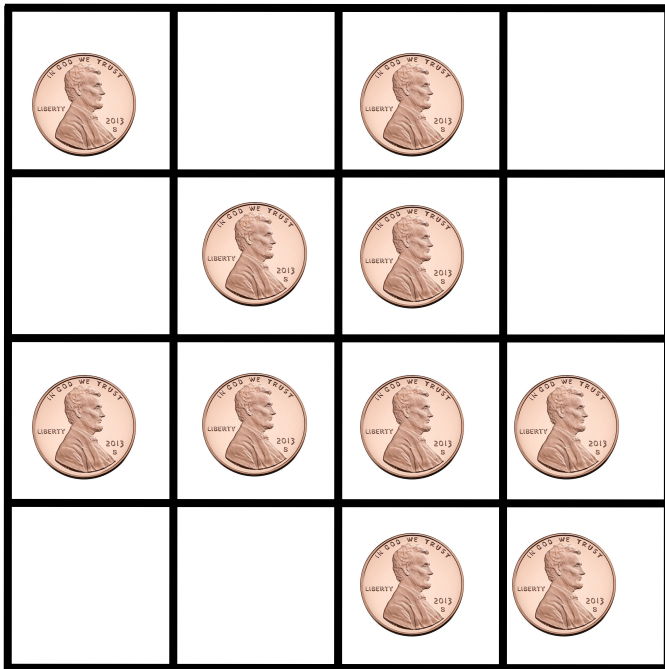ALL the pennies inside cup2

Even Leftovers

Use 16 pennies to fill the 4 x 4 grid as shown above. Remove six of the pennies so that each row and column and each of the 2 long diagonals contain an even number of coins.

Even Leftovers Solution

Remove the pennies so only the ones showing remain.

4 in a row

There are 3 pennies in the horizontal row going across the top of the figure below. There are 4 pennies in the vertical row going down the left side of the figure below.

Move 1 penny so that each row contains 4 coins.

4 in a row solution.

Move the 4th penny at the bottom
of the vertical row of the puzzle
and place it on top of the penny
at the intersection
of the horizontal and vertical rows.

This is a classic puzzle that has been in print for many years. The solution given is the classic solution.   The two dimensional puzzle uses a three dimensional solution. Is the penny sitting on top of the penny in the corner really contained by that row. It is not a "perfect solution but it does allow for a nice conversation.

5 in a row

There are 5 pennies in the horizontal row going across the top of the figure below. There are 3 pennies in the vertical row going down the left side of the figure below.

Move 2 pennies so that each row contains 5 coins.

5 in a row solution.

Move the 2 pennies at both ends

of the horizontal row and

place them on top of the penny

at the intersection

of the horizontal and vertical rows.

This is a classic puzzle that has been in print for many years. The solution given is the classic solution.   The two dimensional puzzle uses a three dimensional solution. Is the penny sitting on top of the penny in the corner really contained by that row. It is not a "perfect solution but it does allow for a nice conversation.

Count then Eliminate the Equilaterals

How many equilateral coin triangles of different sizes can you count in the figure?
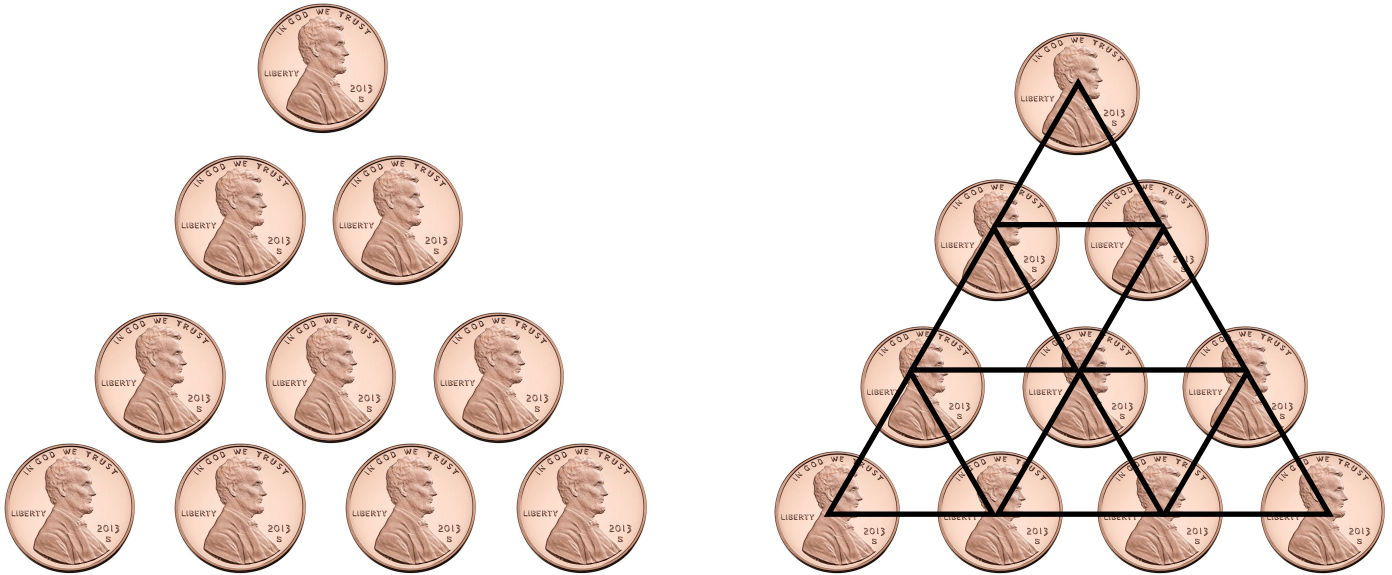
Place 9 pennies in the circles below. The object of the puzzle now is to remove the minimum number of coins so that no equilateral coin triangles remain. In other words, the centers of 3 pennies cannot be connected to form an equilateral triangle.
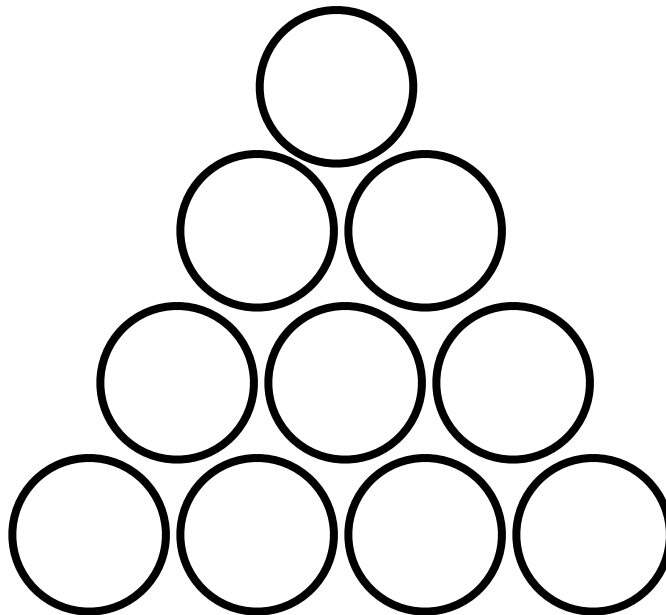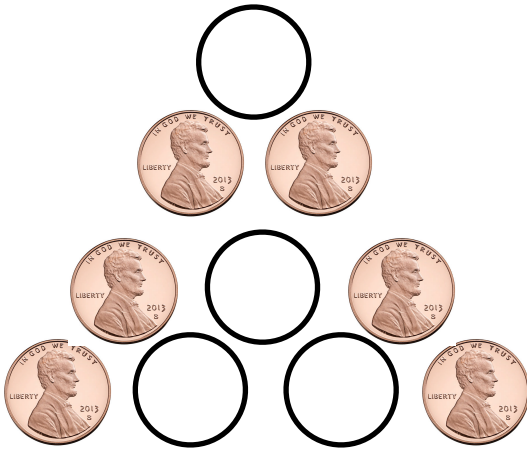
Count then Eliminate the Equilaterals solution.
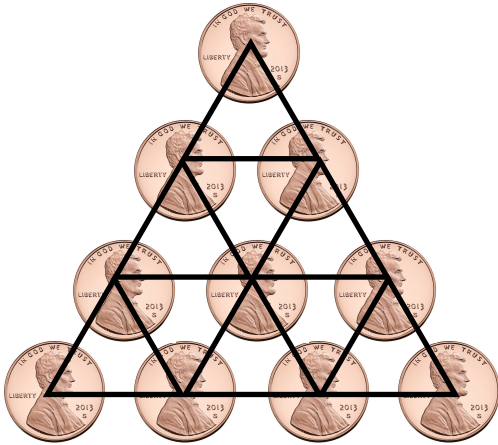
There are 9 equilateral triangles with sides 1 length long.
There are 3 equilateral triangles with sides 2

The minimum number of coins to remove is four.   The unique solution to this puzzle is unique except rotations and reflections.


**Take away the 4 pennies shown as empty circles in
the figure to the left and the remaining 6 pennies will**

10 rows of 3 Pennies (Hard)

A square of nine coins is shown in the drawing below. The 3 horizontal and 3 vertical rows have 3 pennies contains three pennies and the 2 long diagonals also contain 3 pennies. There are 8 rows that each contain three pennies.

Place a real penny over each of the ons on the grid. Your challenge is to move 2 coins to new positions so that there are 10 rows that each contain three pennies.
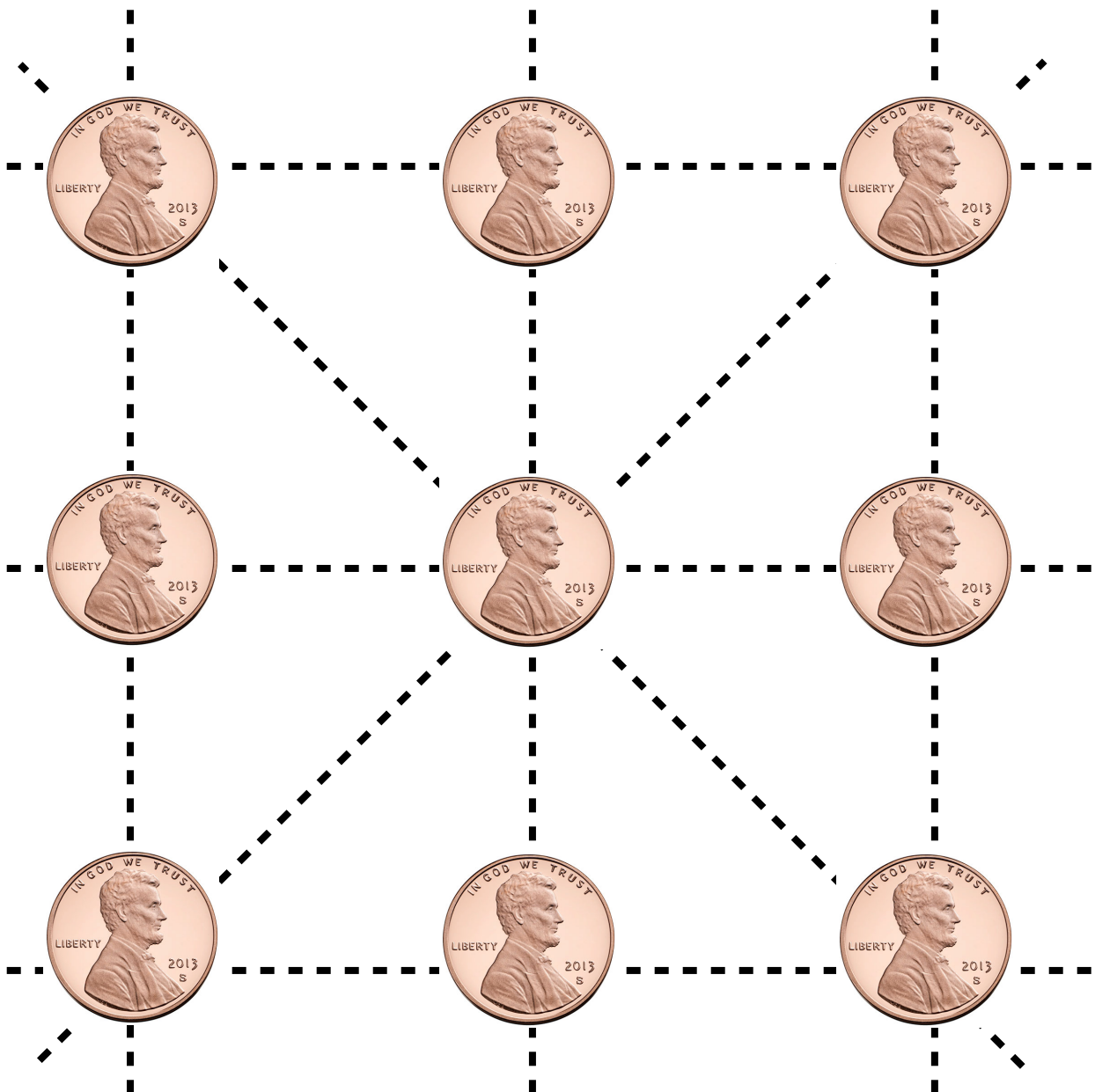
10 rows of 3 Pennies Solution

Move the 2 pennies one the ends of the middle row in towards the center. They will now line up as shown and form 10 rows that each contain 3 pennies.