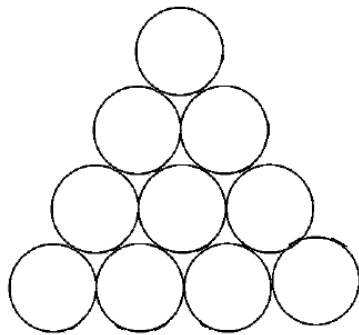
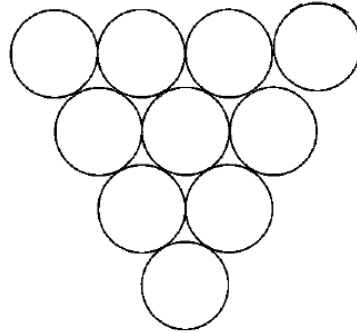


**1. Invert the triangle**

A triangle of pennies is made as in (a). What is the smallest number of pennies which have to be moved to turn the triangle pattern upside down as in (b)?



(a)

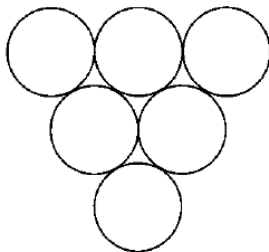


(b)

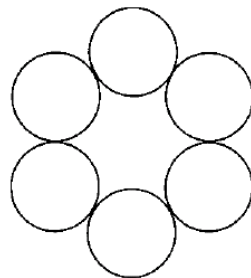
2.

**Ring the triangle**

Make a triangle of six pennies as shown in (a). What is the smallest number of pennies you can move by sliding to form the ring of pennies as in (b), if every time a penny is moved it must be put into contact with two other pennies? Note you are not allowed to push one coin with another.



(a)



(b)

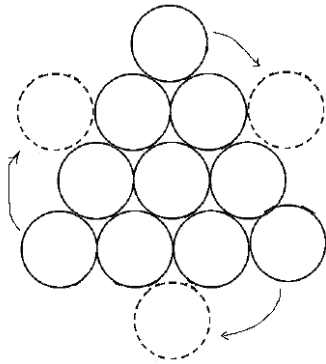
3.

**All touching**

Show how to arrange six pencils (or matchsticks) so that each of them is touching the other five.

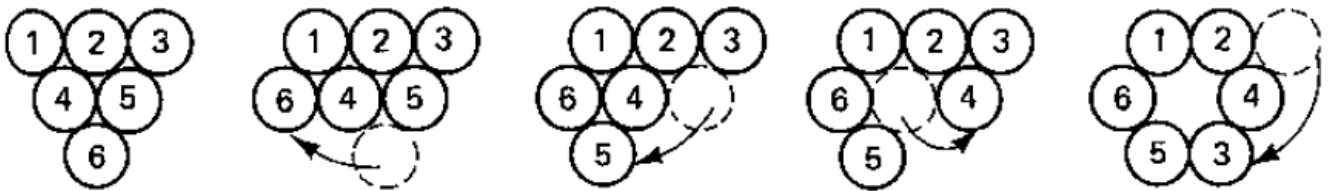
Keys

1. Invert the triangle



2.

Ring the triangle



3.

This may seem an impossible problem to solve until you see the solution.

