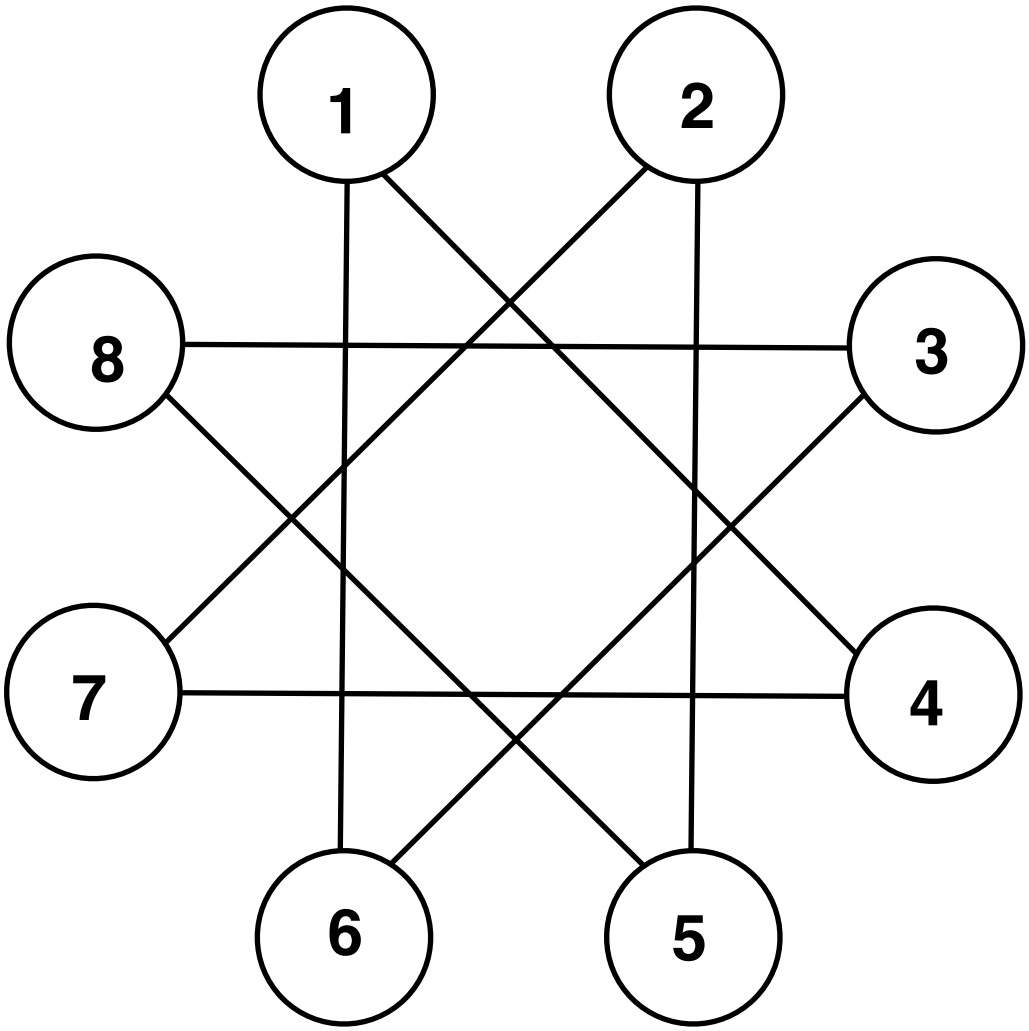
Find Each Penny A Home

Place 7 pennies on a desk and put the paper puzzle on the desk. Place a penny on any one of the 8 circles. Then slide that penny to an open circle directly across from that circle along one of the **straight** lines that connect the circles. For example a penny is placed on circle 3 it can slide to circle 6 or 8 and a penny placed on 4 can slide to circle 1 or 7. Leave the penny on the circle it was moved to. Continue placing a penny on any remaining open circle and sliding it to an open circle until you cannot find an open circle to slide your penny onto.

How many pennies can you place and move before you are blocked form moving a penny.

Can you get all 7 pennies placed and moved?



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You have 7 pennies to find a home for. Place 1 penny on any one of the 8 circles. Then slide that penny to an open circle directly across from that circle along one of the **straight** lines that connect the circles. For example a penny is placed on circle 3 it can slide to circle 6 or 8. Continue placing a penny on any remaining open circle and sliding it to an open circle until you cannot find an open circle to slide your penny onto.

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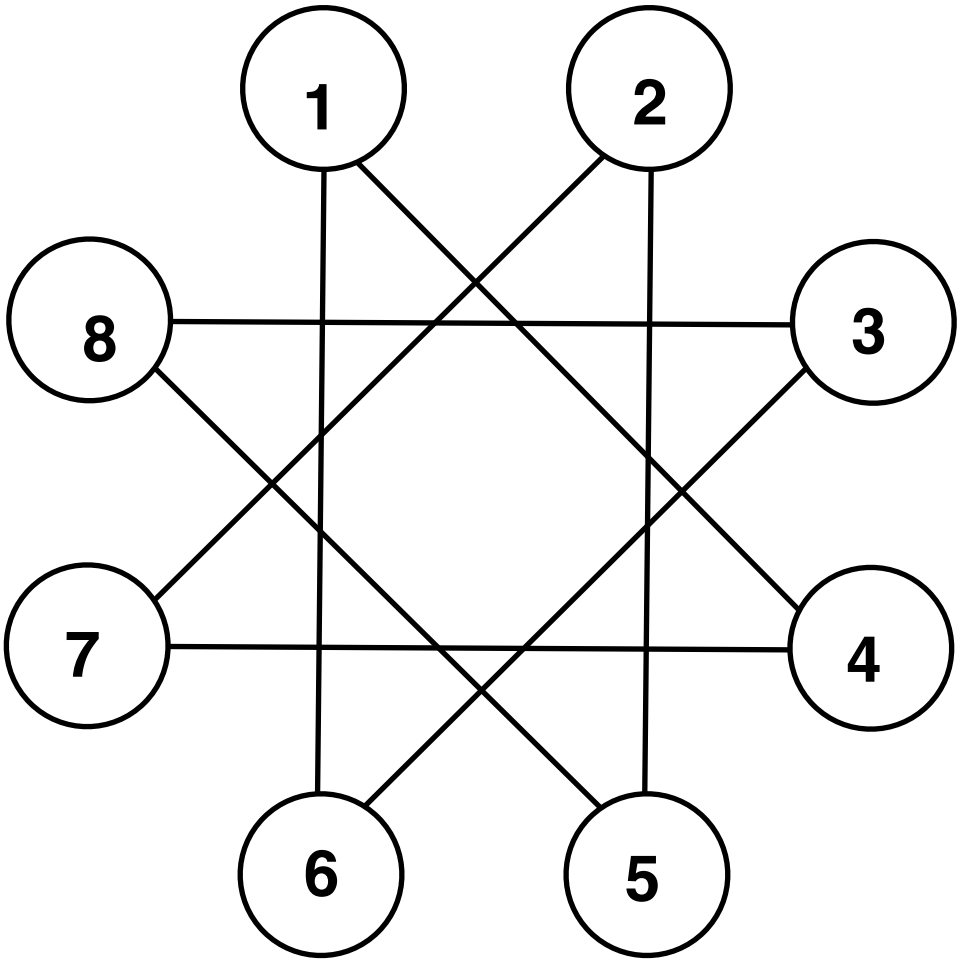


1. I placed a penny on circle number ____ and moved it to circle number ____

2. I placed a penny on circle number ____ and moved it to circle number ____

3. I placed a penny on circle number ____ and moved it to circle number ____

4. I placed a penny on circle number ____ and moved it to circle number ____

5. I placed a penny on circle number ____ and moved it to circle number ____

6. I placed a penny on circle number ____ and moved it to circle number ____

7. I placed a penny on circle number ____ and moved it to circle number ____

Solution:

1. Place a penny on any open circle. Slide that penny to an open circle that is connected to it.

2. Place the second penny on **a** circle **so that the penny can move to the circle where the last penny stared on.** Slide that penny to an open circle that is connected to it.

3. Place the third penny on **a** circle **so that the penny can move to the circle where the last penny stared on**

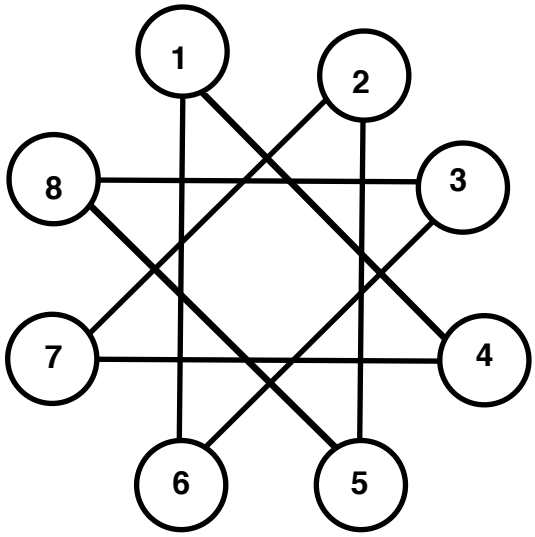
Continue this until all 7 pennies are placed.

You can start on any circle and move to either of the 2 connected circles.

Each new penny must be placed on a circle so that it can be **moved to the circle where the last penny started.**

Example:

A first penny is placed on circle 1 and moved to circle 4.
The 2nd penny must be placed on a circle so that it cam move to circle 1. That is circle 6.
The 3rd penny must be placed on a circle so that it cam move to circle 6 . That is circle 3.
The 4th penny must be placed on a circle so that it cam move to circle 3. That is circle 8.
The 5th penny must be placed on a circle so that it cam move to circle 8. That is circle 5.
The 6th penny must be placed on a circle so that it cam move to circle 5 . That is circle 2.
The 7th penny must be placed on a circle so that it cam move to circle 2. That is circle 7.



It is easy to use 4 pennies before you are blocked. Many students will use 5 pennies. It takes a bit of work to find a way to use all 7. Some students will find the solved it but not remember how they dod it. They should use the numbers on the circle and keep track of the moves so they can explain their moves. This recording is an important skill to develop. A final step is be for the students to generalize the solution.

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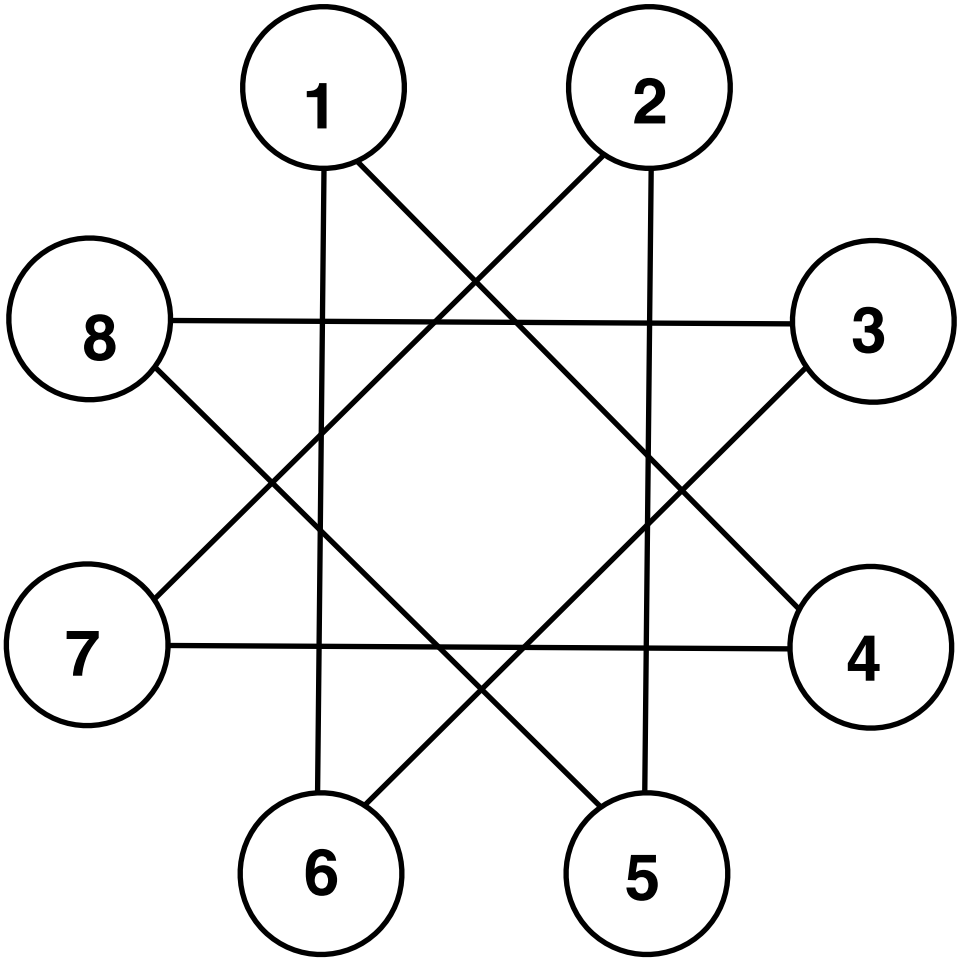

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7. I placed a penny on circle number ____ and moved it to circle number ____

An alternate puzzle grid without numbered circles

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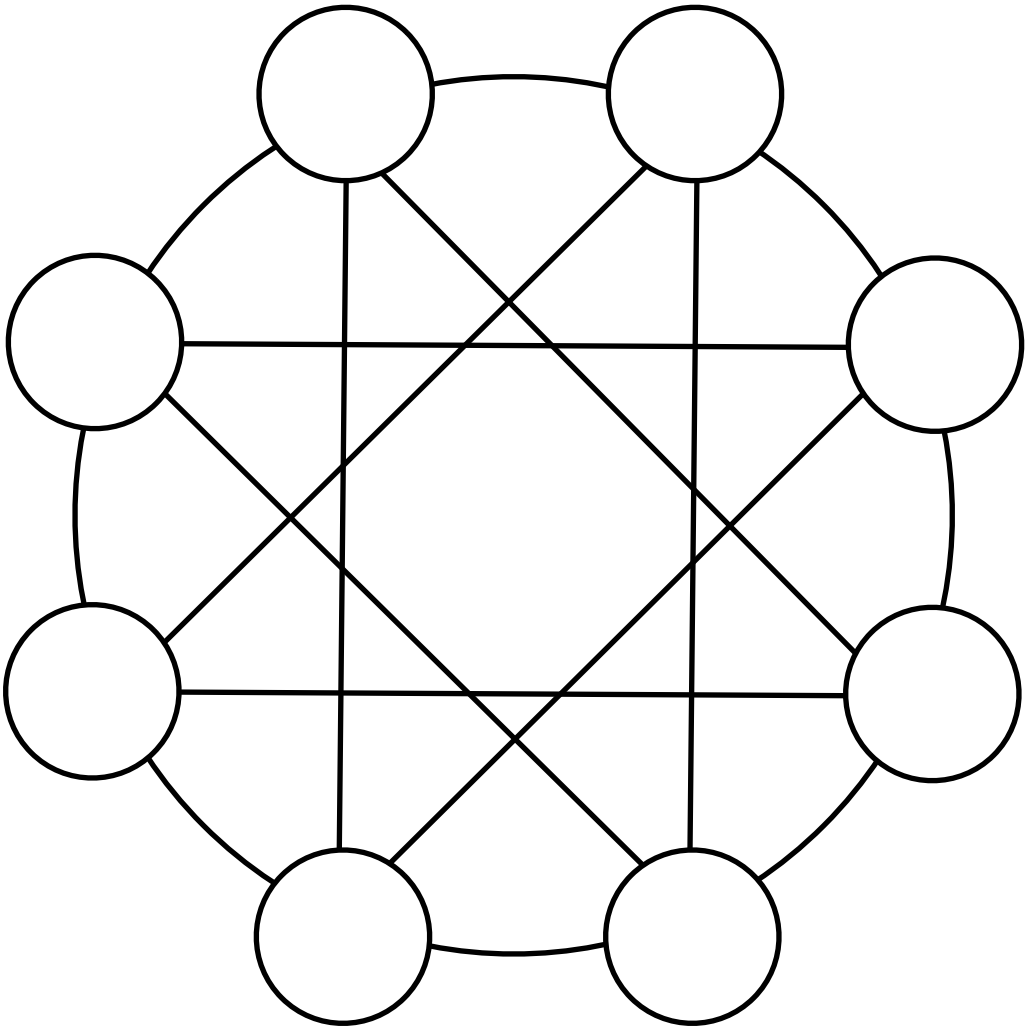

An alternate puzzle grid with dashed lined

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