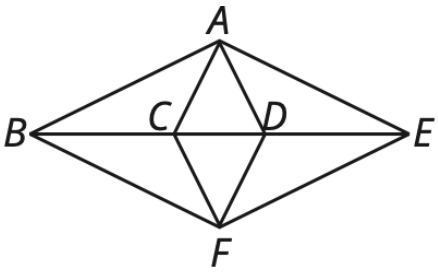
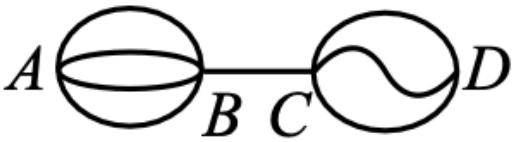
Name: _____

Triangleville has 6 intersections and 11 streets, as shown.

Without passing through the same intersection more than once, in how many ways can someone travel from *A* to *D*?

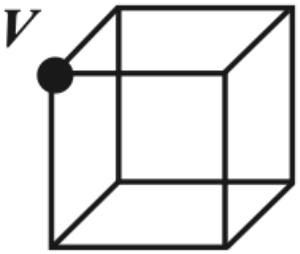


Following only the paths shown, what is the number of different paths that go from *A* to *B* to *C* to *D* and touch each of those points exactly once?

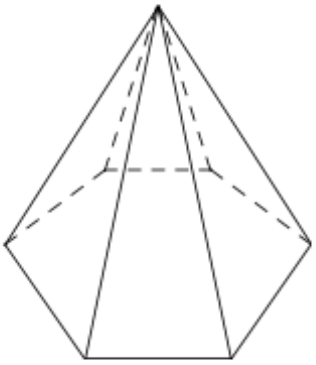


Name: _____

An ant sits at vertex V of a cube with edge of length 1 m. The ant moves along the edges of the cube and comes back to vertex V without visiting any other point twice. Find the number of metres in the length of the longest such path.



The pyramid shown has 7 vertices, 12 edges, and 7 faces (one of which is a hexagon). At least one of the edges on each of the faces is to be colored red. What will be the least number of edges colored red?

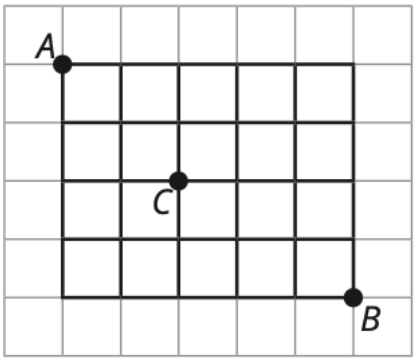


Name: _____

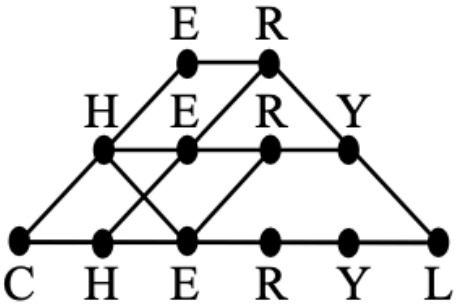
The diagram shows a map of the streets in a city where every block is an identical square.

I need to travel along the streets from *A* to *B* via *C*, using the shortest possible distance.

In how many different ways can I make this trip?

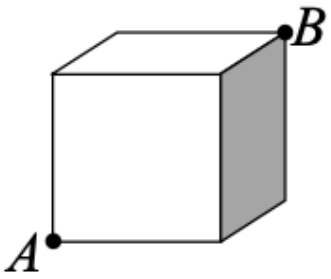


Cheryl traces her name, CHERYL, by following the lines shown. She can change direction only at a letter. How many different paths can trace her name?



Name: _____

Given the cube shown at the right, an ant travels from vertex A to vertex B, always walking along an edge of the cube.
How many shortest paths are there from A to B?



In the plane figure shown, you are only allowed to move along the lines (moving down, to the right, or diagonally downwards).
How many different possible paths can be taken to move from W to L?