

Mission Street Puzzles Scholarship Submission
Madelyn Cox-Guerra

Cake Catastrophe:

You are a decorator at a professional bakery. Today, you are decorating a three-tier wedding cake. Each circular tier will be decorated with an evenly-spaced ring of fondant flowers. The bride has left complex instructions on how she would like the cake to be decorated and where she would like it to be delivered:

1. The cake must have a total of 17 fondant flowers of four types: roses, orchids, violets, and geraniums. At least one of each type must be on the cake.
2. Violets cannot be directly across from roses within the same tier.
3. There must be three flowers on the top tier.
4. No geraniums can be on a tier lower than any orchids.
5. No two roses can be placed next to each other within the same tier.
6. The middle tier must have double the number of flowers on the top tier.
7. If there is an orchid on a tier, there must also be at least one violet on that tier.
8. There are as many roses on the whole cake as there are flowers on the bottom tier.
9. If there are more violets than geraniums, then the wedding venue is the National Mall. Otherwise, the wedding venue is the United States Botanic Gardens.

If there are a total of three orchids on the cake, where should you deliver the cake when it is finished?