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The different orders of landmarks on a photograph.

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From the text: The photograph above shows the approach to Calais on the ferry from Dover. We can easily see some tall prominent landmarks. From left to right they are; lighthouse, cathedral, Hotel de Ville, Tour de Guet, and finally a block of modern flats. From different viewpoints we would see these landmarks in a different order. The number of ways of arranging five objects is $5! = 120$. Are all these permutations possible on a photograph? If not how many permutations are possible? If we know the order of some landmarks what does this say about the position of the camera? Another view of the Calais skyline gives the order Hotel de Ville, cathedral, lighthouse. This is the sort of problem we consider in this article.

Classification: G40 K20

Keywords: geometry; landmarks; viewpoints; projections; points; straight lines; permutations