Consider a Polynomial problem that runs in a polynomial time that, due to its parameters, exceeds an algorithm that runs in exponential or greater time.

In this special case, this algorithm has a solution that is produced in both polynomial time and exponential time. Assuming its solution is produced in exponential time, it does not, for this parameter case, have an algorithm that will solve the problem, and is therefore intractable.

For example, this excerpt from Wikipedia:

Nevertheless a polynomial time algorithm is not always practical. If its running time is, say, *n*15, it is unreasonable to consider it efficient and it is still useless except on small instances.

Making the assumption that the solution for a our example Polynomial time algorithm far exceeds any exponential time algorithm, lets give an example.

Suppose the Convex Hull problem, which is easily solvable in polynomial time, that is, it is part of P complexity class.

Now assume that the Convex Hull is to be wrapped around an excess number of points, say one hundred trillion, so that the problem has become intractable – that is, there is no algorithm that can solve it in polynomial time. However, assume that there are four outlier points, that if connected, form a convex hull. So assume the following graph:

Assume that this rectangle bounding the one hundred trillion points is a convex hull for the points. Also assume that the 100 Trillion Points are close enough together that they fit on a single page, also the outliers forming the hull do as well.

The problem above, due to the amount of inner points, is an illustration of a problem that though we have an algorithm that solves in polynomial time, is essentially intractable since it is not useful for this problem. I am stating that this transforms the problem from a P problem to a NP problem.

However, there is something unusual about this problem instance. Although it may take a computer until the end of time to solve such a problem with our current hardware, a human visual processing system can solve this problem almost instantly, identifying the bounding convex rectangle almost immediately upon looking at the image. This single fact implies that some intractable problems may actually have polynomial time solutions. We call such intractable problems that we have previously classified as NP-Hard as NP-Visual.

Should a problem in NP-Complete be found as NP-Visual, NP-Visual being polynomial time solvable would cause NP-Complete membership to equate NP Complete problems with P complexity class.