

# [The or combination of triangles, this design is](https://assignbuster.com/the-or-combination-of-triangles-this-design-is/)

The definition of a truss is any of variousstructural frames based on the geometric rigidity of the triangle and composedof straight members subject only to longitudinal compression, tension, or both: functions as a beam or cantilever to support bridges, roofs, etc.

Trusses arethe most commonly used structural device used in architecture today. Trusses areused in almost every thing they are in your attic, barns, buildings, andbridges. A truss is used in architecture and engineering, it is a supportingstructure made of beams, girders, or rods usually made of steel or wood. A trussusually takes the form of a triangle or combination of triangles, this design iscapable of carrying large amounts of weight. Trusses are used for large spansand heavy loads, especially in bridges and roofs. Their open construction islighter than a beam structured platform but is just as strong. The parts of atruss are the tie-beams, posts, rafters, and struts; the distance over which thetruss extends is called the span. A truss is formed by connecting the ends ofstraight pieces of metal or wood to form a series of triangles lying in a singleplane.

A truss is based on the fact that a triangle is a configuration thatcannot collapse or change its shape unless the length of one of the sides ischanged. The two most commonly used truss designs are the Howe and Warrentrusses. In 1806 the first patented bridge system, the Burr arch truss was usedin the US.

The Town truss was invented in 1820, in 1840 the Howe truss wasinvented, and in 1841 the bowstring was invented it was a breakthrough inengineering design. The Pratt and Warren trusses were invented between 1838 and1844. The first trusses were made of wood and used for building homes and roofs. During the 18th and early 19th centuries cast and wrought iron were used, mostlyin the construction of railroad bridges. Later in the 19th century steel becamethe most used truss material. Trusses are used also for the construction ofiron-frame industrial buildings and in roof and floor systems. They are alsoused in the construction of certain industrial machines, such as cranes, lifts, and in the design of aircraft and automobile frames.

Two types of trusses arethe Howe and Warren trusses, Warren trusses are more efficient than Howe trussesin carrying a load considering the weight of material used in the constructionof the truss. The optimum ratio of height to span length is anywhere between0. 23 and 0. 41 for Howe trusses, and 0. 16 and 0.

39 for Warren trusses. The Prattand the Warren were simple skeletal forms that adapted well to iron andeventually to steel that is why they are two of the most popular trusses usedtoday. Trusses are very important in today’s world they help us cross hugebodies of water, they hold the roof up over our heads, and they allow cranes tobe able to support huge amounts of weight when building giant skyscrapers. Thefact is the invention of the truss is just as important as the invention of thewheel. Life would be very difficult without trusses. Architecture