

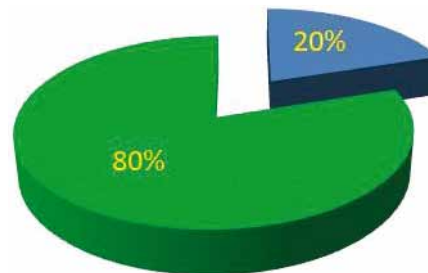


# MathsBites by Clifford the Dog

## The Law of the Vital Few

### The Pareto-Juran principle, also called the law of the vital few or the 80/20 rule

This is an empirically based 'rule of thumb' that in a range of contexts around 80% of results comes from around 20% of the underpinning factors. These contexts are often related to business, for example, 20% of clients generate 80% of sales. Application of the principle was developed by the Italian economist, Vilfredo Pareto, in the context of investigating land distribution in Italy. See: [http://en.wikipedia.org/wiki/Pareto\\_principle](http://en.wikipedia.org/wiki/Pareto_principle)



20% of the input (time, resources effort) will produce 80% of the output.

See: <http://ygraph.com/chart/1548>

**Activity:** Find a range of contexts for which the 80/20 rule appears to be the case, where a variant of this rule seems to be the case, and where it doesn't seem to be applicable.

### Pareto distribution

The Pareto distribution (see: [http://en.wikipedia.org/wiki/Pareto\\_distribution](http://en.wikipedia.org/wiki/Pareto_distribution)) is a power law type of probability distribution. For example, in NBA basketball the top 20% of players score around 80% of the points. See: <http://mjpperry.blogspot.com.au/2008/08/top-20-of-nba-players-had-795-of-total.html>

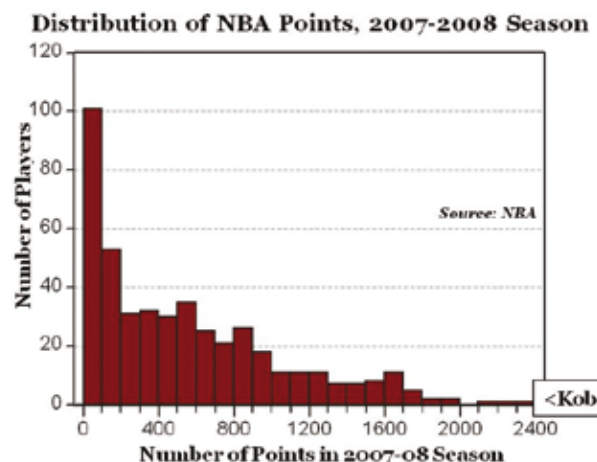


Image: Dannow (Wikimedia Commons)

**Activity:** Investigate whether the data for goal scorers in the AFL competition over the past few years fits a Pareto distribution. For example, in 2011: [http://www.footywire.com/afl/footy/ft\\_goal\\_kickers?year=2011&type=T&sort=goals](http://www.footywire.com/afl/footy/ft_goal_kickers?year=2011&type=T&sort=goals)

