It has two parameters (shape parameter) and (scale parameter). It is +vely skeweed and Leptokurtic

If , it reduces to negative exponential distribution. If and , then it becomes as chi-square distribution. If the shape parameter is an integer then it may be referred to as Erlang distribution. As the parameter tend to infinity, it tends to normal distribution.

**Total area**

**Mean and variance**

**r-th moment about origin**

**Harmonic mean**

**Mode**

**Moment generating function**

**Question:** Show that .

(Using results from normal distribution)

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**Question:** Show that .

Integrating by parts gives,

Let

**Question:**  .

**Solution:**

**Question:** Let X and Y be two independent Gamma variables, then find the distribution of (i) X+Y (ii) .

If X and Y are two independent Gamma variables with parameters and respectively, then

Let