**PROPERTIES OF LAPLACE TRANSFORM**:

**Linearity Property:** If a, b, c be any three constants and f,g,h be any function of t whose Laplace transform exist, then

**Change of Scale Property:** if , then where a is positive constant.

Proof: By defn of Laplace transform,we have

Let

Also if therefore the above integral becomes

**First Shifting Property:** if , then if , where a be any real constant.

Proof: By definition of LT, we get

=

**WORKED OUT EXAMPLES**:

**Example2:** Find Laplace transform of the following functions

(a ) (b) (c) (d)

**Solution**:

=.

(b)L(

Hear

=

.

(c )L ( , since

.

(d) L( )

Comparing with First shifting theorem

Hear

Therefore L( )