

SIFAT TRANSFORMASI PERTAMA

JIKA $L\{F(t)\} = f(s)$, MAKA

$$\boxed{L\{e^{at} \cdot F(t)\} = f(s-a)}$$

BUKTI:

$$L\{F(t)\} = \int_0^{\infty} e^{-st} \cdot F(t) dt = f(s)$$

$$\rightarrow L\{e^{at} \cdot F(t)\} = \int_0^{\infty} e^{-st} \{e^{at} \cdot F(t)\} dt$$

$$= \int_0^{\infty} e^{-st+at} \cdot F(t) dt$$

$$= \int_0^{\infty} e^{-(s-a)t} \cdot F(t) dt = \underline{f(s-a)}$$

$$\boxed{L\{e^{at} \cdot F(t)\} = f(s-a)}$$