> ERR:=E^x-(m*x+b);

$$ERR := E^x - m\,x - b$$

> QUAD:=int((ERR)^2,x=0..1);

$$QUAD := \frac{1}{2}\,(\mathrm{e})^2 + \frac{1}{3}\,m^2 - 2\,\mathrm{e}\,b + b^2 + m\,b - \frac{1}{2} + 2\,b - 2\,m$$

> Qm:=diff(QUAD,m);

$$Qm := \frac{2}{3}\,m + b - 2$$

> Qb:=diff(QUAD,b);

$$Qb := -2\,\mathrm{e} + 2\,b + m + 2$$

> CP:=solve({Qm,Qb},{b,m});

$$CP := \{\, m = -6\,\mathrm{e} + 18,\ b = 4\,\mathrm{e} - 10 \,\}$$

> evalf(CP);

$$\{\, m = 1.69030903,\ b = .87312731 \,\}$$

> Qmm:=diff(Qm,m);

$$Qmm := \frac{2}{3}$$

> Qmb:=diff(Qm,b);

$$Qmb := 1$$

> Qbb:=diff(Qb,b);

$$Qbb := 2$$

> Qmm*Qbb-(Qmb)^2;

$$\frac{1}{3}$$

The sceond derivative test says that the critical point is a local minimum. Here it is also an absolute minimum.

> plot({E^x,(-6*E+18)*x+(4*E-10)},x=0..1);