Nr. 1

$$f_a(x) = -ax^2 + 6x$$

Aufgabe: finde die gemeinsamen Punkte

$$a \neq b$$

$$-ax^2 + 6x = -bx^2 + 6x \qquad |-6x$$

$$-ax^2 = -bx^2 \qquad |+bx^2$$

$$-ax^2 + bx^2 = 0$$

$$x^2(b-a) = 0 \qquad |:(b-a)$$

$$x^2 = 0 \qquad |\sqrt{}$$

$$x = \pm 0 \qquad \rightarrow f_a(0) = 0$$

$$\underline{\underline{P(0|0)}}$$

Nr. 2

$$f_a(x) = x^2 \cdot e^{1-\frac{x}{a}}$$

$$\underline{\underline{P(0|0)}}$$

$$x^2 \cdot e^{1-\frac{x}{a}} = x^2 \cdot e^{1-\frac{x}{b}}$$

$$x^2 \cdot e^{1-\frac{x}{a}} - \left(x^2 \cdot e^{1-\frac{x}{b}}\right) = 0 \qquad\qquad \frac{x}{a} = \frac{x}{b} \quad |\cdot a$$

$$x^2\left(e^{1-\frac{x}{a}} - e^{1-\frac{x}{b}}\right) = 0 \qquad\qquad x = \frac{x}{b} \cdot a \quad |\cdot b$$

$$x_{1,2} = 0 \qquad\qquad\qquad bx = ax \quad |-ax$$

$$e^{1-\frac{x}{a}} - e^{1-\frac{x}{b}} = 0 \quad |+e^{\cdots} \qquad bx - ax = 0$$

$$e^{1-\frac{x}{a}} = e^{1-\frac{x}{b}} \quad |\ln() \qquad x(b-a) = 0 \quad |:(b-a)$$

$$1 - \frac{x}{a} = 1 - \frac{x}{b} \quad |-1 \qquad x_3 = 0$$

$$\frac{x}{a} = \frac{x}{b}$$