

pt 1.

$$32x^4 - 48x^3 - 10x^2 + 21x + 5 = 0$$

System $x_1 = 1$, merge

$$32 \cdot 1^4 - 48 \cdot 1^3 - 10 \cdot 1^2 + 21 \cdot 1 + 5 = 0$$

$$\begin{array}{r|l} 32x^3 - 16x^2 - 26x - 5 & x-1 \end{array}$$

$$\begin{array}{r} 32x^4 - 48x^3 - 10x^2 + 21x + 5 \\ - (32x^3 - 16x^2 - 26x - 5) \\ \hline 16x^3 + 16x^2 + 47x + 10 \\ - (16x^3 + 16x^2) \\ \hline 47x + 10 \\ - (47x + 5) \\ \hline 5 \end{array}$$

maximum

$$32x^4 - 48x^3 - 10x^2 + 21x + 5 = 0$$

$$(x-1)(32x^3 - 16x^2 - 26x - 5) = 0$$

$$x-1=0 \text{ with } 32x^3 - 16x^2 - 26x - 5 = 0 \cdot 32^2$$

$$x=1 \quad 32 \cdot 1^3 - 16 \cdot 1^2 - 26 \cdot 1 - 5 = 0$$

System $32x = y$, merge

$$y^3 + 16y^2 - 832y - 5120 = 0$$

System $y_1 = -8$, merge

$$(-8)^3 - 16 \cdot (-8)^2 - 832 \cdot (-8) - 5120 = 0$$

$$x_2 = \frac{y_1}{9} \quad x_2 = \frac{-8}{32} = -0,25$$

Maximum

$$(x+0,25) \cdot (32x^2 - 24x - 20) = 0$$

$$32x^2 - 24x - 20 = 0 \quad | \cdot 16$$

$$8x^2 - 6x - 5 = 0$$

$$\Delta = 36 + 160 = 196 = 14^2$$

$$x_2 = \frac{6 - 14}{8} = -1$$

$$x_4 = \frac{6 + 14 - 20}{8} = \frac{2}{8} = 0,25$$

Minim. $-1; -0,25; 1; 2,5$

$$\begin{array}{r} 32x^2 - 16x^2 - 24x - 5 \\ 32x^2 + 8x \\ \hline -24x^2 - 6x \\ -24x^2 - 5 \\ \hline 20x - 5 \\ 0 \end{array}$$

~2.

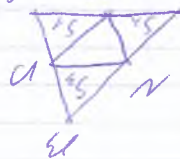
Beurteilung:

Angabe $AM = x, MC = y$

Wegspalten ΔANM u. ΔMPC werden

$$a) \frac{S_1}{S_2} = \left(\frac{x}{x+y} \right)^2$$

Geometrie:



$S_{\Delta NMP}$

$$\sqrt{S_1} = \frac{x}{x+y}$$

Wegspalten ΔMNC u. ΔABC werden

$$b) \frac{S_2}{S_2} = \left(\frac{y}{x+y} \right)^2, \quad \sqrt{S_2} = \frac{y}{x+y}$$

Wegspalten ΔMNC u. ΔABC werden

$$\sqrt{S_1 + S_2} = 1, \quad S = (\sqrt{S_1} + \sqrt{S_2})^2$$

$$S_3 = \frac{1}{4} S = \frac{1}{4} (S - S_1 - S_2) = \sqrt{S_1 S_2}$$

$$\text{Ombert. } S = \sqrt{S_1 S_2}$$