

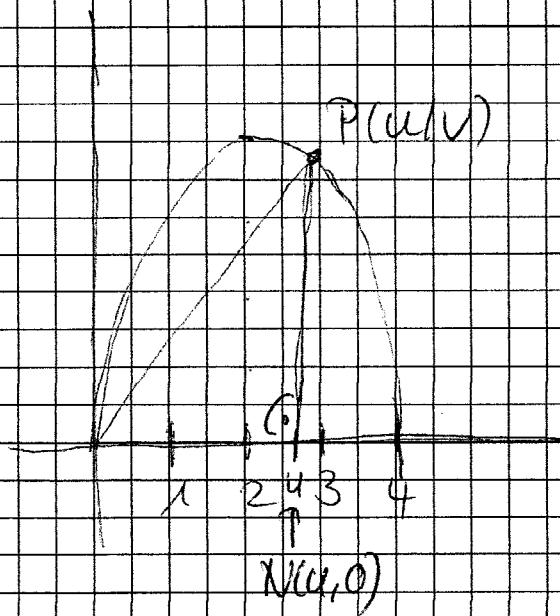
Aufgabe 3b

$$f(x) = -x^2 + 4x$$

$$f'(x) = -2x + 4$$

$$f'(x) = 0$$

$$x = 2$$



$$A_{\Delta} = \frac{u \cdot (-u^2 + 4u)}{2} = \frac{-u^3 + 4u^2}{2}$$

$$\frac{g \cdot h}{2} = -\frac{u^3}{2} + 2u^2$$

$$A'_{\Delta}(u) = -\frac{3}{2}u^2 + 4u$$

$$A'_{\Delta}(u) = 0 \Leftrightarrow u(-\frac{3}{2}u + 4) = 0$$

$$u = 0 \Rightarrow \text{kein Dreieck}$$

$$-\frac{3}{2}u + 4 = 0$$

$$\Leftrightarrow \frac{3}{2}u = 4 \Leftrightarrow u = \frac{8}{3} = 2.66$$

$$v = -2.66^2 + 4 \cdot 2.66$$

$$\left(-\left(\frac{8}{3}\right)^2 + 4 \cdot \frac{8}{3}\right) = -\frac{64}{9} + \frac{32}{3} = \frac{64 + 96}{9} = \frac{160}{9} = 17.78$$

$$A''_{\Delta}(u) = -3u + 4 < 0$$

$$\Rightarrow \text{Max}$$

abbvie