

ES

$$y = kx^2 - 2x(4k-1) + 16k-7$$

$$y - kx^2 + 2x(4k-1) - 16k + 7 = 0$$

$$(y - 2x + 7) + k(-x^2 + 8x - 16) = 0$$

$$y - 2x + 7 = 0$$

$$-x^2 + 8x - 16 = 0$$

$$\Downarrow \\ x^2 - 8x + 16 = 0$$

$$(x-4)^2 = 0$$

$$\begin{cases} (x-4)^2 = 0 \\ y = 2x-7 \end{cases} \begin{cases} x=4 \\ y=1 \end{cases} B(4;1) \text{ enthält 2 volle.}$$

$$b) \begin{cases} y = kx^2 - 2x(4k-1) + 16k-7 \\ y = 0 \end{cases}$$

$$kx^2 - 8kx + 2x + 16k - 7 = 0$$

$$kx^2 + x(-8k+2) + 16k-7 = 0$$

$$\Delta = 0$$

$$(-4k+1)^2 - k(16k-7) = 0$$

$$16k^2 + 1 - 8k - 16k^2 + 7k = 0$$

$$\boxed{k=1}$$

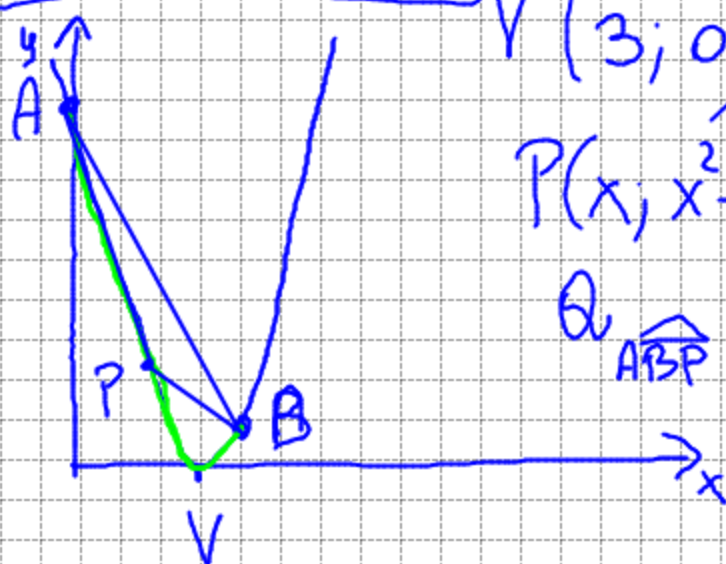
$$\boxed{y = x^2 - 6x + 9}$$

$$A(0;9)$$

$$V(3;0)$$

$$B(4;1)$$

c) \widehat{AB}



$$P(x, x^2 - 6x + 9)$$

$$\alpha_{\widehat{ABP}} = 6$$

$$r_{AB}: \frac{y - y_A}{y_B - y_A} = \frac{x - x_A}{x_B - x_A} \quad \frac{y - 9}{1 - 9} = \frac{x - 0}{4 - 0}$$

$$\frac{y - 9}{-8} = \frac{x}{4} \quad y = -2x + 9 \quad r_{AB}$$

$$d(\overline{AB}) = \sqrt{(x_A - x_B)^2 + (y_A - y_B)^2} = \sqrt{(0-4)^2 + (9-1)^2} = \sqrt{16+64} = \sqrt{80} = 4\sqrt{5}$$

$$\overline{PH} = d(P; r_{AB}) = \frac{|y_P + 2x_P - 9|}{\sqrt{5}} = \frac{|x^2 - 6x + 9 + 2x - 9|}{\sqrt{5}} = \frac{|x^2 - 4x|}{\sqrt{5}}$$

$$Q_{\triangle ABP} = \frac{\overline{AB} \cdot \overline{PH}}{2} = \frac{1}{2} \cdot \frac{4\sqrt{5} \cdot |x^2 - 4x|}{\sqrt{5}} = 6$$

$$|x^2 - 4x| = 3$$

$$x^2 - 4x = 3 \quad \dots\dots\dots$$

$$x^2 - 4x = -3 \quad \dots\dots\dots$$

d) $y = kx^2 - 2x(4k-1) + 16k - 7$

$$V\left(\frac{4k-1}{k}; \frac{4(4k-1)^2 - 4k(16k-7)}{4k}\right)$$

$$\left\{ \begin{array}{l} x = \frac{4k-1}{k} \\ y = \frac{(4k-1)^2 - k(16k-7)}{k} \end{array} \right\} \left\{ \begin{array}{l} k = \frac{-1}{x-4} \\ \dots\dots\dots \end{array} \right.$$