$4x^2 - y^2 + 4x + 4y = 0$

$\frac{x^2}{a^2} - \frac{y^2}{b^2} = \pm 1$ $\quad \vec{r}(x_0, y_0)$

$$\frac{(X - x_0)^2}{a^2} - \frac{(Y - y_0)^2}{b^2} = \pm 1$$

$$\begin{cases} X = x + x_0 \\ Y = y + y_0 \end{cases}$$

$$\begin{cases} x = X - x_0 \\ y = Y - y_0 \end{cases}$$

$4x^2 + 4x$

$-(y^2 - 4y)$

$(ax+b)^2$

$(2x+1)^2 - 1$

$-[(y-2)^2 - 4]$

$4x^2+4x$

$-(y^2-4y)$

$(ax+b)^2 = a^2x^2 + 2abx + b^2$

$4x^2 + 4x + k - k$

$a = 2$

$2ab = 4 \Rightarrow b = 1$

$k = b^2 \Rightarrow k = 1$

$4x^2+4x+1-1 = (2x+1)^2 - 1$

$-(y^2-4y+4-4) = -[(y-2)^2-4] = -(y-2)^2+4$

$$4x^2 - y^2 + 4x + 4y = 0$$

$$(2x+1)^2 - 1 - (y-2)^2 + 4 = 0$$

$$\frac{(x+\frac{1}{2})^2}{3/2^2} - \frac{(y-2)^2}{3} = -1$$

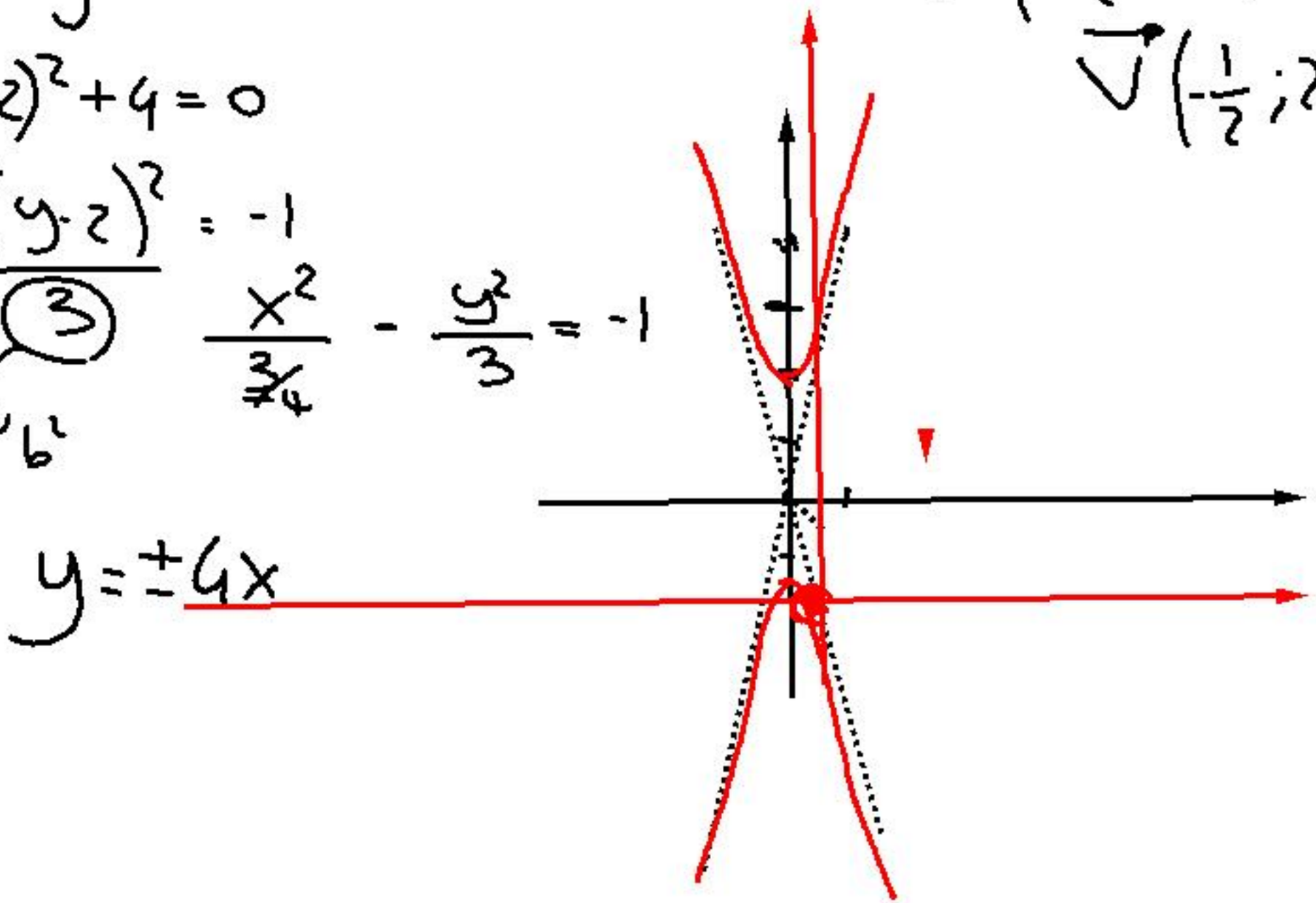
$a^2$ ↑ $3/2^2$ ; $b^2$ ↑ $3$

$$\frac{X^2}{3/4} - \frac{Y^2}{3} = -1$$

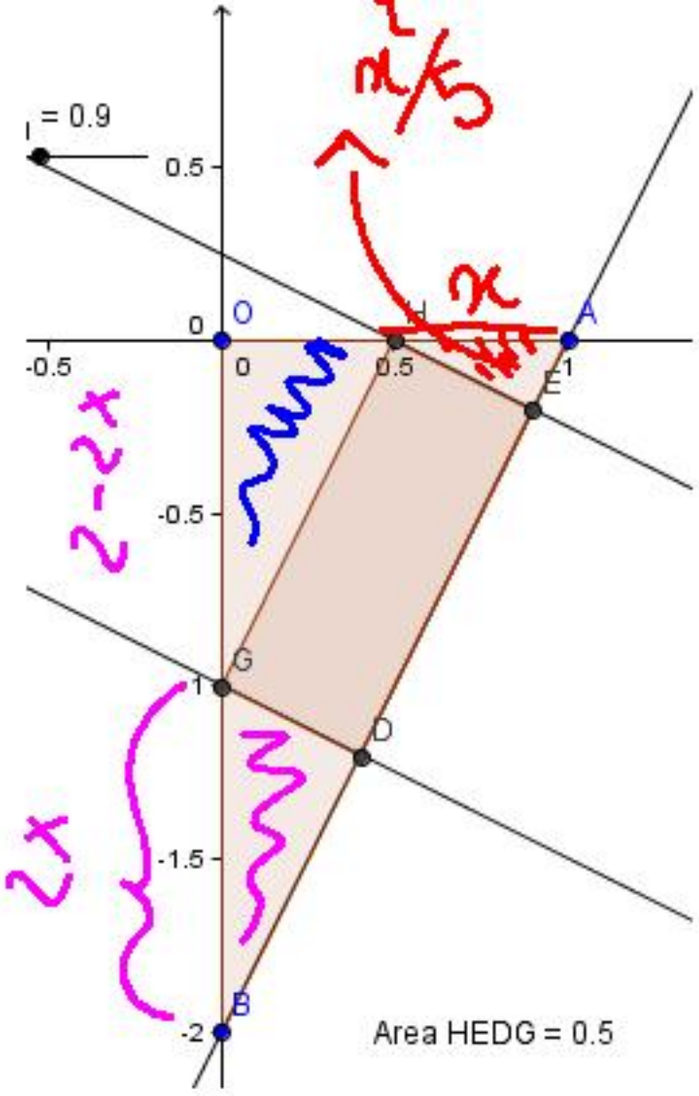
$$y = \pm 4x$$

$\vec{v}\left(-\frac{1}{2}; 2\right)$

$\vec{v}\left(-\frac{1}{2}; 2\right)$



$$ax^2 + by^2 + \cancel{cxy} + dx + ey + f = 0$$




$\overline{HA} = x$

$E \equiv A \Rightarrow x = 0 \quad A = 0$

$H \equiv O \Rightarrow D \equiv E \Rightarrow x = 1 \Rightarrow A = 0$

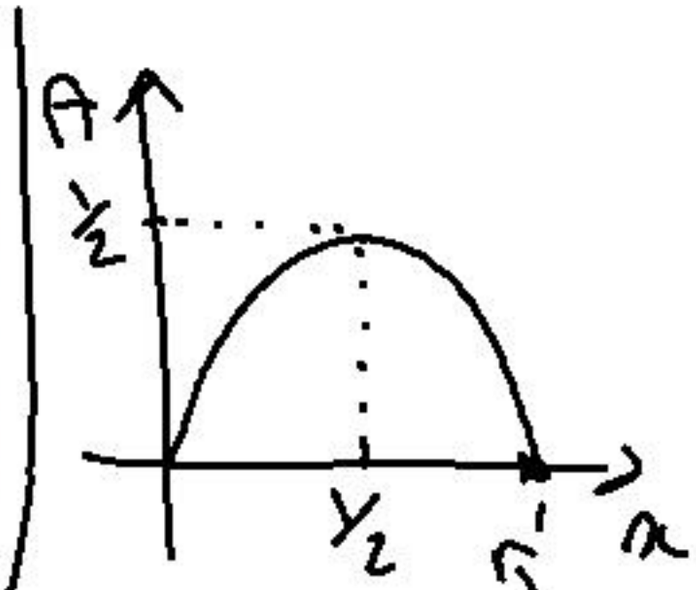
$D = [0, 1]$

$A_{ABC} = 1$ $\quad \overline{AC} = 1$, $\overline{BC} = 2$, $\overline{AB} = \sqrt{5}$

$\overline{HA} = x$

$\frac{\overline{HA}}{\overline{AB}} = \frac{x}{\sqrt{5}}$

$\frac{A_{AHE}}{A_{ABC}} = \frac{x^2}{5}$




1) $A_{AHE} = \frac{x^2}{5}$

2) $\triangle OHG$ $\quad \frac{\overline{OH}}{\overline{OA}} = \frac{1-x}{1} \Rightarrow A_{OHG} = (1-x)^2$

3) $\triangle BDG$ $\quad \frac{\overline{GD}}{\overline{AB}} = \frac{2x}{\sqrt{5}} \Rightarrow A_{BDG} = \frac{4x^2}{5}$

$A(x) = A_{ABC} - A_1 - A_2 - A_3 =$

$= 1 - \frac{x^2}{5} - (1-x)^2 - \frac{4x^2}{5} =$

$= -2x^2 + 2x$