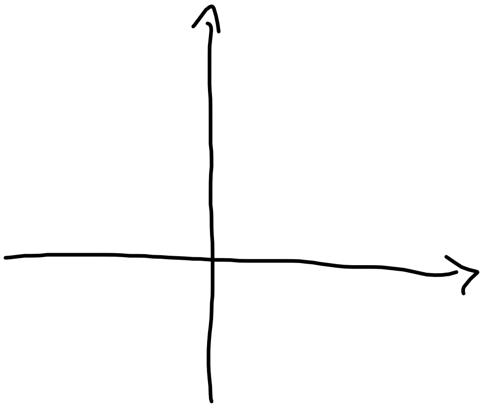
GEOM. ANALITYCZNA g. w ukł. wsp.



f. lin.

post. kier. f. lin. $\underbrace{y = ax + b}$ $(0, b)$

a – wsp. kier.

b – wyr. wolny, wsp. pocz.

$a > 0$ $f \nearrow$

$a = 0$ f stała

$a < 0$ $f \searrow$

$k: y = a_k x + b_k$

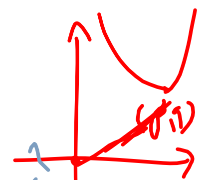
$l: y = a_l x + b_l$

$k \parallel l \Leftrightarrow a_k = a_l$

$k \perp l \Leftrightarrow a_k \cdot a_l = -1 \Leftrightarrow \boxed{a_l = -\frac{1}{a_k}}$

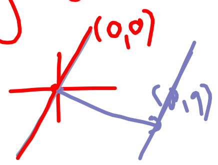
k nach. do OX pod kątem 60°

$\boxed{a_k = \operatorname{tg} \alpha} = \operatorname{tg} 60^\circ = \sqrt{3}$



postać kanoniczna f. lin.:

$y = ax \xrightarrow{(p,q)} \underline{a(x-p)+q}$ wsp. pkt.



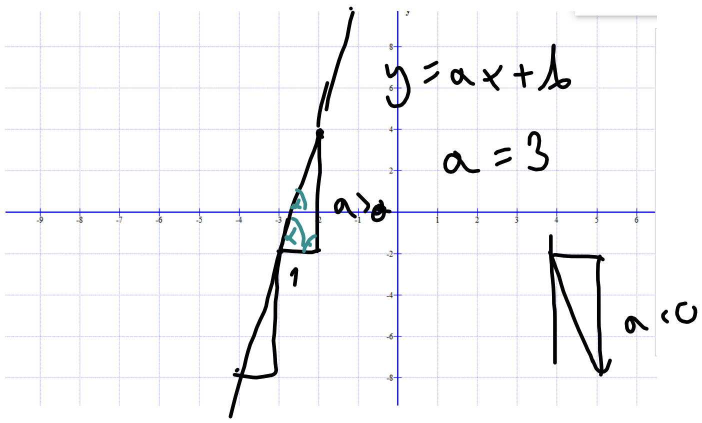
$y = ax^2$

$\downarrow (p,q)$

$y = a(x-p)^2 + q$

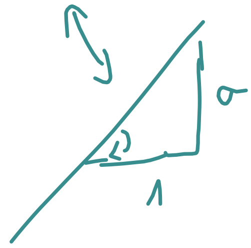
$W(p, q)$

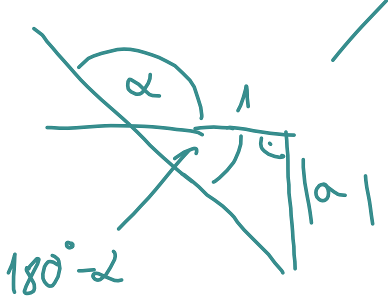
$$y = a(x-p) + q$$



$y=\frac{1}{2}x+2$

$a=tg\alpha$





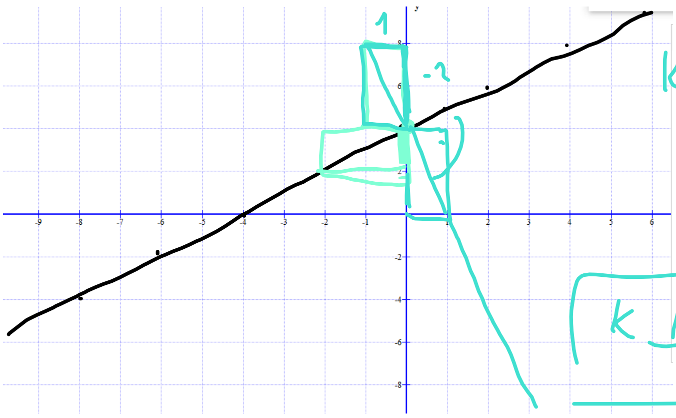
$tg(180^\circ-\alpha)=|a|$

$\parallel$

$-tg\alpha=|a|$

$tg\alpha=-|a|$

$tg\alpha=a$



$k: \underline{y = \frac{1}{2}x + 2}$

$a = \frac{1}{2}$

$b = 2$

$\boxed{k \perp l: y = -2x + 2}$

$A(2,3)$
$B(-1,-6)$
$C(30,28)$

1) $pr(AB) = k$
2) $l \parallel k \wedge C \in l$
3) $m \perp k \wedge C \in m$
4) oblicz pole $\triangle ABC$

I sp.

$\overset{x\ y}{\underset{p\ q}{}}A(2,3)$ $\overset{p\ q}{\underset{x\ y}{}}B(-1,-6)$

$\boxed{k: y = a(x-p)+q}$ $[a, p, q]$ (x – arg, y – wart)

$A: y = a(x-2)+3$ $a = ?$

$B: -6 = a(-1-2)+3$

$3a = 9$ $a = 3$

$k: y = 3(x-2)+3$ $k: y = 3x-3$

sp II $k: y = ax+b$ a i b?

$A(2,3)$
$B(-1,-6)$

$\begin{cases} 3 = 2a + b \\ -6 = -a + b \end{cases}$

$9 = 3a$ $a = 3$

$b = -3$ $y = 3x-3$

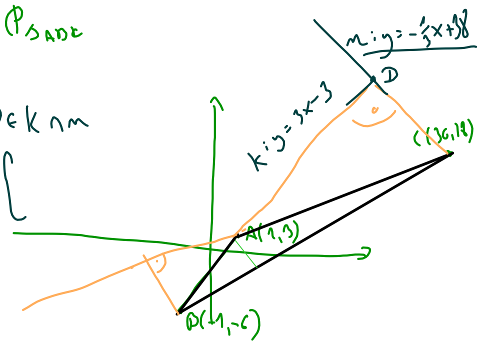
$k: y = 3x-3$ $C(30,28)$

$k \parallel l: \ y = 3(x-30)+28$

$k \perp m: \ y = -\frac{1}{3}(x-30)+28$

$P_{\triangle ABC}$

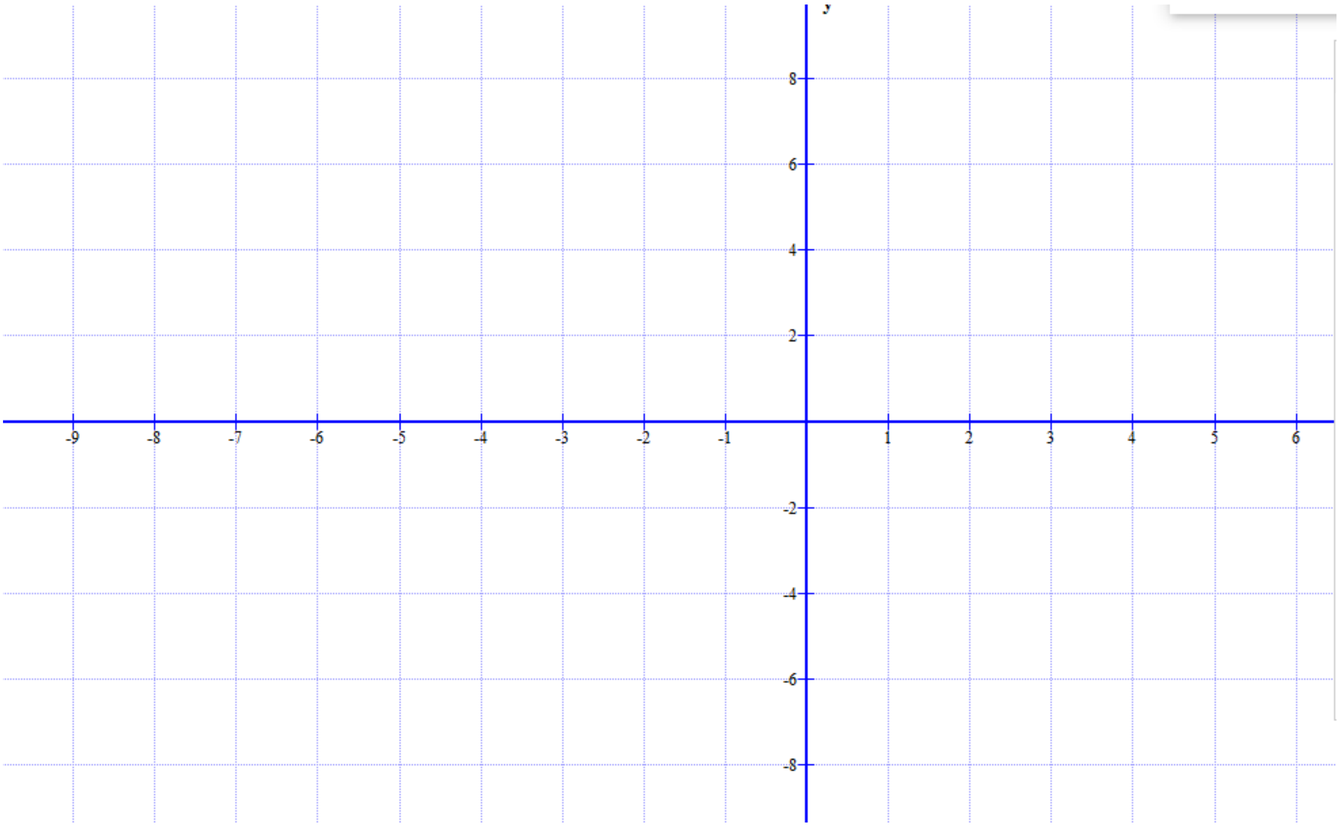
$D \in k \wedge m$ $\begin{cases} k \\ m \end{cases}$

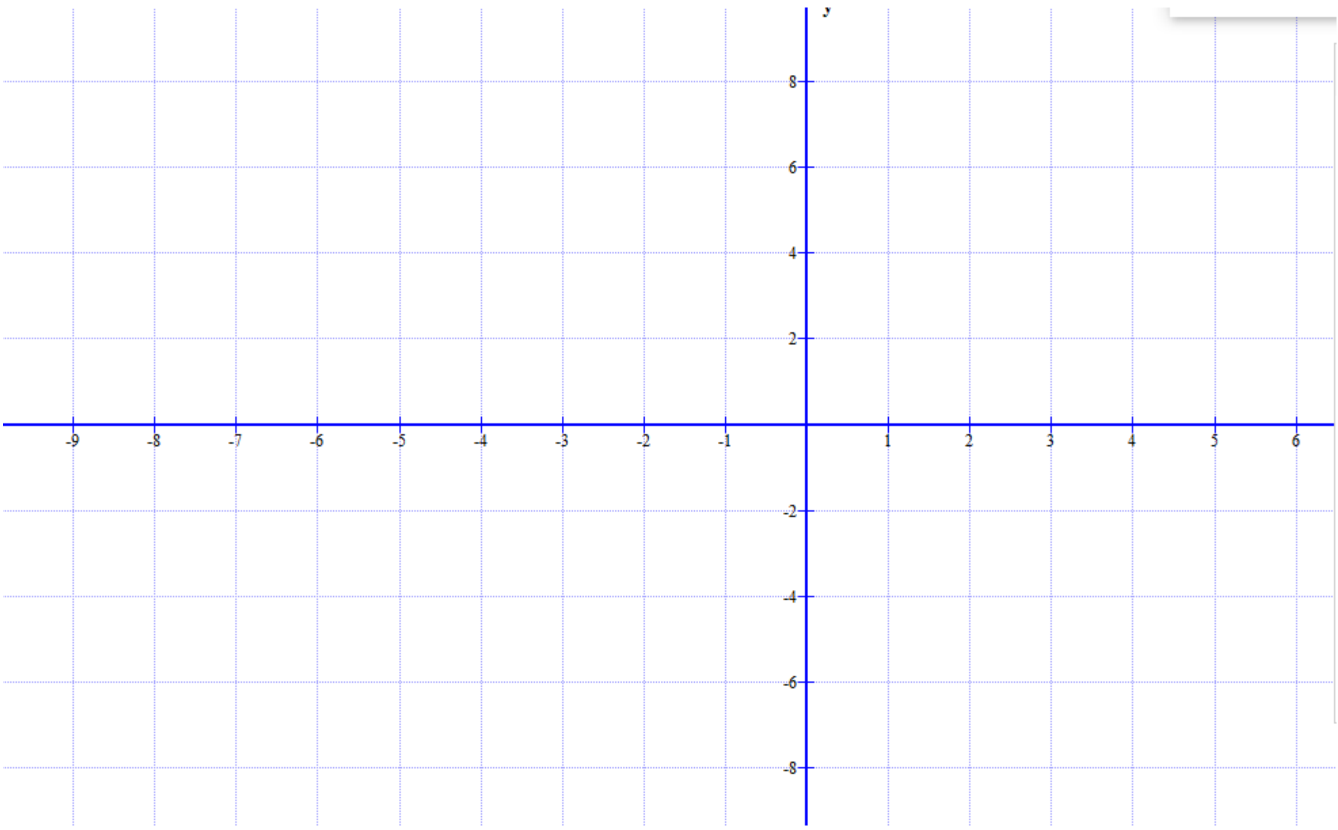


$P_{\triangle} = \frac{1}{2}|AB|\cdot h_C = \frac{1}{2}|AC|\cdot h_B = \frac{1}{2}|BC|\cdot h_A$

$|AB| = \sqrt{(x_B-x_A)^2+(y_B-y_A)^2}$

$h_C = |CD| = \sqrt{(x_D-x_C)^2+(y_D-y_C)^2}$


y
8
6
4
2
-2
-4
-6
-8
-9
-8
-7
-6
-5
-4
-3
-2
-1
1
2
3
4
5
6


y
8
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4
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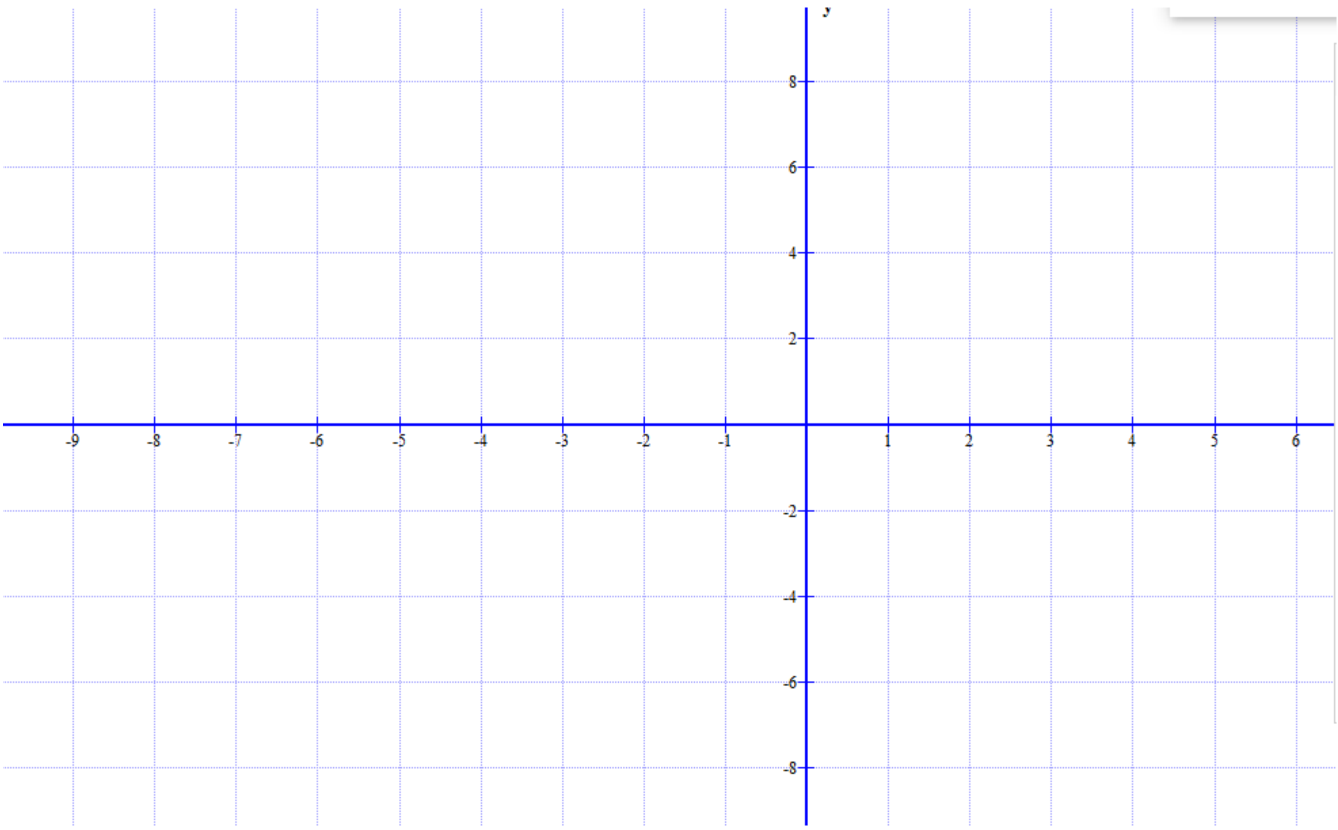
-9 -8 -7 -6 -5 -4 -3 -2 -1 1 2 3 4 5 6
-2
-4
-6
-8


y
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