

Function points

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I discovered a new mathematical area (function points). Name (function point) is given as the point of defined geometric object can be fixed (constant) and movable (independent (dependent) variables) in number line or plane or space.

1 Definition of the geometric object

1.1 Defined straight line

$d(A , B , a (AB))$

Read it - there is a point (A , B) between them there straight line (a(AB)) .

2 Number line

2.1 $A=const. , B=x , a(AB)=y$

Point (A) upon number line has a permanent place ($A=const.$) .
Point (B) moving the number line from $-\infty$ to $+\infty$ ($B=x$) .

Example :

$A=6 , B=x , f(6 , x , y)$ Read :

Function point (y) of the constant 6 and independent variables x .

$y=A-B (y=6- x)$ - first function point

$x=7 , y=6-x=6-7=-1$

$x=-7 , y=6-x=6-(-7)=13$

$y=B-A (y=x-6)$ - second function point

$x=7 , y=x-6=7-6=1$

$x=-7 , y=x-6=-7-6=-13$

$x-6=0$, $x=6$ - zero for the hybridization of two function point
 $y=A-B$ ($y=6-x$) $x>6$, $y=B-A$ ($y=x-6$) $x<6$ - negative hybridization of the first and second functions points
 $x=7$, $y=6-x=6-7=-1$
 $x=-7$, $y=x-6=-7-6=-13$

$y=B-A$ ($y=x-6$) $x>6$, $y=A-B$ ($y=6-x$) $x<6$ - positive hybridization of the first and second functions points
 $x=7$, $y=x-6=7-6=1$
 $x=-7$, $y=6-x=6-(-7)=13$

2.2 $A=x$, $B=f(x)$, $a(AB)=y$

Point (A) moving the number line from $-\infty$ to $+\infty$ ($A=x$)
 Point (B) depends on the x independent variables ($B=f(x)$)

Example :

$A=x$, $B=x_1=2x+1$, $f(x, x_1=2x+1, y)$, Read :

Function point (y) of the independent variables x and the dependent variable x_1 (function , which is dependent on the independent variables x)

$y=A-B$ ($y=x-x_1$) , $y=x-(2x+1)$ - first function point
 $x=7$, $y=x-(2x+1)=7-(2\times 7+1)=-8$
 $x=-7$, $y=x-(2x+1)=-7-(2\times(-7)+1)=6$

$y=B-A$ ($y=x_1-x$) , $y=(2x+1)-x$ - second function point
 $x=7$, $y=(2x+1)-x=(2\times 7+1)-7=8$
 $x=-7$, $y=(2x+1)-x=(2\times(-7)+1)-(-7)=-6$

$x-(2x+1)=0$, $x=-1$ - zero for the hybridization of two function point
 $y=A-B$ ($y=x-x_1$) , $y=x-(2x+1)$ $x>-1$, $y=B-A$ ($y=x_1-x$) , $y=(2x+1)-x$ $x<-1$
 - positive hybridization of the first and second functions points
 $x=7$, $y=(2x+1)-x=(2\times 7+1)-7=8$
 $x=-7$, $y=x-(2x+1)=-7-(2\times(-7)+1)=6$

$y=B-A$ ($y=x_1-x$) , $y=(2x+1)-x$ $x>-1$, $y=A-B$ ($y=x-x_1$) , $y=x-(2x+1)$
 $x<-1$ - negative hybridization of the first and second functions points
 $x=7$, $y=x-(2x+1)=7-(2\times 7+1)=-8$
 $x=-7$, $y=(2x+1)-x=(2\times(-7)+1)-(-7)=-6$

3 Plane

Cartesian coordinate system in the plane .
 \check{p}_n - coordinate x , coordinate y , number of graphical functions , number of geometric object .

3.1 $A = \text{const. } \check{p}_1, B = x\check{p}_2$

Point (A) upon number line has a permanent place ($A = \text{const. } \check{p}_1$) .
Pointa (B) moving the number line from $-\infty$ to $+\infty$ ($B = x\check{p}_2$) .

Example :

$$A = 6\check{p}_1, B = x\check{p}_2, f(6\check{p}_1, x\check{p}_2, y)$$

\check{p}_1 -coordinate x i \check{p}_2 - coordinate y (may also be a contrary) read :

Function point (y) the constants 6 located at coordinates x and x are independent variables, which is located at the coordinate y (may also be a contrary) .

$$y = \sqrt{A^2 + B^2} = \sqrt{6^2 + x^2}$$

$$x = 7, y = \sqrt{6^2 + 7^2} = 9.21$$

$$x = -7, y = \sqrt{6^2 + (-7)^2} = 9.21$$

3.2 $A = x\check{p}_1, B = f(x)\check{p}_2$

Point (A) moving the number line from $-\infty$ to $+\infty$ ($B = x\check{p}_1$) .
Point (B) depends on the independent variable x ($B = f(x)\check{p}_2$)

Example :

$$A = x\check{p}_1, B = x_1\check{p}_2 = 2x + 1, f(x\check{p}_1, x_1\check{p}_2 = 2x + 1, y)$$

\check{p}_1 -coordinate x i \check{p}_2 - coordinate y (may also be a contrary) , read :

Function point (y) of the independent variable x, which is located on the coordinate x and dependent variables x_1 which is located on the coordinate y (the function, which is dependent on the independent variable x) , may also be a contrary .

$$y = \sqrt{A^2 + B^2} = \sqrt{x^2 + (2x + 1)^2}$$

$$x = 7, y = \sqrt{7^2 + (2 \times 7 + 1)^2} = 16.55$$

$$x = -7, y = \sqrt{-7^2 + (2 \times (-7) + 1)^2} = 14.76$$

4 Number of graphical functions