FUNCTIONAL DEPENDENCE

Vocabulary

abscissa axis - ось абсцисс
axis of ordinates - ось ординат
coordinate space - координатная плоскость
coordinate origin - координат
function - функция
value of argument - значение аргумента
definitional domain - область определения
independent variable - независимая переменная
dependent variable - зависимая переменная
linear function - линейная функция
quadratic function - квадратичная функция
direct proportionality - прямая пропорциональность
inverse proportionality - обратная пропорциональность
f*unctional dependence* - функциональная зависимость
graphical chart, graphic - график
decreasing function - убывающая функция
increasing function - возрастающая функция
distinct points - точки, отличные друг от друга

Problems

1. Plot on the coordinate space a point which abscissa is 3 and ordinate is opposite the abscissa.

2. Plot the segment MN knowing the coordinates of its ends: M(-1;4) and N(2;_2). Find the coordinates of the point of intersection of the segment with the abscissa axis.

3. The length of the rectangle is 3 cm less than its width. Express by formula the dependence of perimeter and area of this rectangle on its length. Which of those expressions is linear function?

4. Which of these straight lines $y = x^2 - 2x$; $y = x^2 - 2$ goes through the coordinate origin? Draw that line.

5. Line *m* goes through the point (-3; 4) and is parallel to line $y = 3x - 4$. What is the formula of the line *m*?

6. The coordinates of vertex of an isosceles triangle are (-2;1) and (2; 7). The line segment joining these points forms a lateral side of a triangle. What are the coordinates of the third vertex of that triangle?

7. Which of these functions is decreasing $y = 3x - 5$; $y = 6 - 0{,}5x$; $y = -5$; $y = \frac{5}{x}$?

8. Five distinct points lie in a plane such that 3 of points are on line ℓ and 3 of the points are on a different line, ***m***. What is the total number of lines that can be drawn so that each line passes through exactly 2 of these 5 points?